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MOTOR AGE

CLEAN SWEEP FOR GERMANY IN GRAND PRIX

HANRIOT, BENZ, THIRD

LAUTENSCHLAGER, MERCEDES, WINNER

HEMERY, BENZ, SECOND

PARIS, July 7—Special cablegram—In 2 days of racing on the Dieppe triangular circuit, France and Germany divided high honors, with perfect weather and road conditions and before the largest throngs that ever witnessed a motor contest, national or international. In the voiturette event on Monday, the curtain-raiser for the grand prix, the first five cars to finish were of French manufacture, Guyot, piloting a double-cylinder Delage car, taking premier honors, with the marvelous average of 50⅓ miles an hour. Today in the grand prix Germany swept away all the high honors, the first three cars finishing this sensational struggle being of German manufacture. Bitter as was the crushing defeat of French, Italian, English and other contesting cars in this contest, the cheers that came from the thousands of Frenchmen when Lautenschlager, driving a big Mercedes, flashed first past the wire after covering the 478.1-mile course in 6 hours 55 minutes 43 seconds, marked an epoch in international sport. Officially representing the president of the French republic, a cabinet minister doffed his hat, gave the signal to the scores of bands and lusty Frenchmen blew out the triumphant notes of the song so dear to the Vaterland—the "Wacht Am Rhine."

Scarcely had the first refrain of this stirring German anthem echoed in the stand when Hemery, former Vanderbilt cup winner and piloting another German-made car, the Benz, finished second, 8 minutes 41 seconds behind Lautenschlager, while following closely and landing in third position was another Benz car, also driven by a French expert, Hanriot, who required 7 hours 5 minutes 13 seconds to complete the course.

GRAND PRIX RESULTS

First—Lautenschlager, of Germany, in a Mercedes; time, 6:55:43.

Second—Hemery, of Germany, in a Benz; time, 7:04:24.

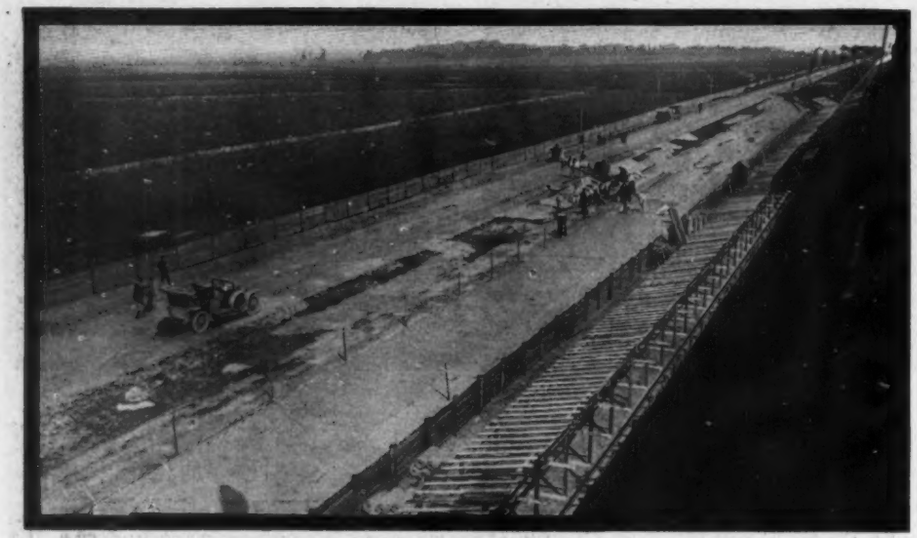
Third—Hanriot, of Germany, in a Benz; time, 7:05:13.

VOITURETTE RACE RESULTS

First—Guyot in Delage; time, 5:45:30.

Second — Naudin, Sizaire-Naudin; time, 5:52:06.

Third—Goux, Lion-Peugeot; time, 5:56:06.



VIEW OF THE STRETCH IN FRONT OF THE GRAND STAND

Although a marvelous pace was maintained in the grand prix, six drivers setting new marks for the circuit in the first round, the speed all the way through did not exceed that averaged in last year's grand prix, when the mighty Nazzaro attained the record-breaking average of more than 70 miles—close to 71. But the 1908 performance of the winning Mercedes car was better than the mark of 1906 and quite creditable considering the adverse wind that prevailed at certain portions of the course. Official declaration is that Lautenschlager averaged 111 kilometers or 69.24 miles an hour for the race.

Thomas Meets With Accident

But if continental Europe and Great Britain looked for the favorite Renault to capture the highest honors, with Nazzaro piloting the Fiat making the concluding round a dare-devil finish for the goal one long to be remembered, what of the United States? Only one American car, the Thomas Flyer, had been pitted against the nearly fifty other machines of European make and Lewis Strang, pilot of the victorious Isotta Fraschini car in two of the United States' greatest stock car races—the Savannah trophy and the Briarcliff—was the man expected to carry old glory to the front in this big event.

ROAD SIGN—TURN ON BRIDGE

The Thomas car, however, was doomed to an inglorious defeat because of an untoward accident an hour before the signal was given to line up for the start. While driving the American car into the inclosure previous to the early morning start Strang's machine came to a sudden stop with a whirr and a crash. Something was wrong with the transmission and reversing gear. In desperation Strang called for his mechanic to eliminate the trouble. "Do something, for heaven's sake," was the frenzied cry of the driver, who had studied the course for weeks for this crucial test of speed.

But there was not time to remedy matters. Forced to enter the international battle disabled—with the first and second speed and reversing gear out of commission—the American competed only on his nerve. Technically speaking, had there been time for a conference, the American car would have been disqualified, as the rules of the race plainly call for a reverse gear driven by the motor of the car. French, German, Italian, English and other cars were snorting around the picturesque and admirably protected circuit, and Strang had no alternative. With the car hopelessly out of the running, he drove it around the first circuit in 53 minutes 44 seconds, yielded several more minutes to tire troubles, kept up his courage when damaged cylinders gave the remainder of the motor its warning to desist, and withdrew from the unequal conflict after four rounds. He had plenty of company, for one by one the foreign cars that were in trouble retired soon after. Nearly 48 miles in less than 54 minutes with a damaged car! But that was not all. Strang's time for the second round with infinitely more tire trouble was 3 minutes and 43 seconds more than an hour. On the third round he totaled 56:47, and on the concluding round for his efforts his time was 58:01.

DELAGE TWO-CYLINDER CAR, WINNER OF VOITURETTE RACE

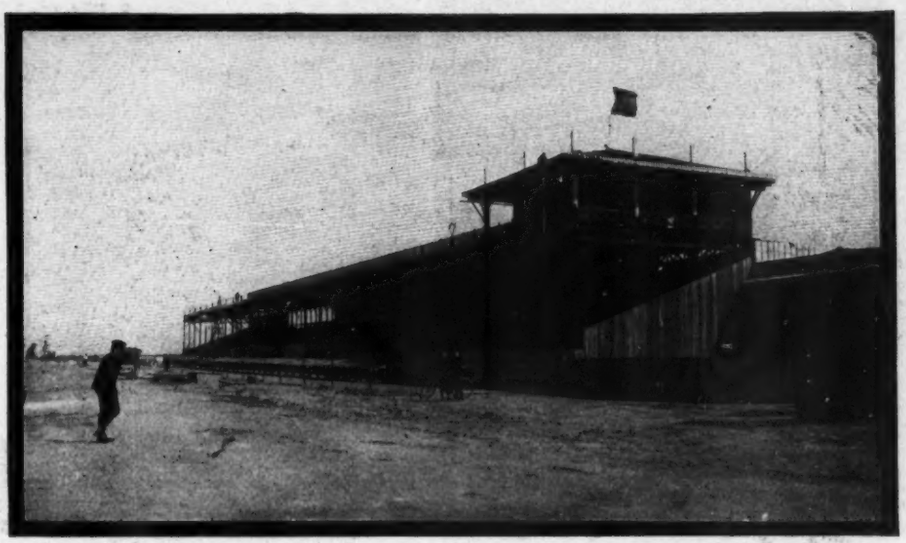
For the protection of the public—nearly 1,000,000 enthusiasts of all countries viewed the struggle from advantageous points on this Dieppe circuit—a whole brigade of soldiery was utilized. Not even the proverbial chicken or dog was reported destroyed under the flying wheels and no spectator attempted to pass the wall of steel bayonets. But this admirable police system did not serve to save the contestants themselves, the grand prix furnishing a distressing feature in the deaths of two contestants and the serious injury of another, as well as the partial blinding of Hemery, whose goggles were smashed by a flying stone sent hurtling through the dusty air by a racing car. Physicians immediately took charge of the Vanderbilt cup hero, injected cocaine into his eye to assuage the terrible pain and were horror-stricken when, a moment later, the plucky Frenchman insisted upon mounting his seat in the Benz car.

Cissac and Mechanic Killed

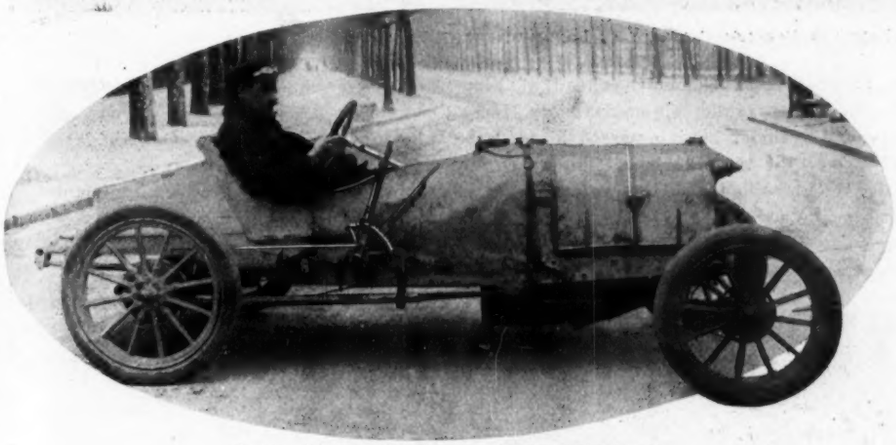
On the final round, after making a gallant effort to put the Panhard into a commanding position and while driving at a rate computed to be close to 77 miles an hour, Cissac, at the wheel of the French

Panhard, together with his mechanic, Schaub, were hurled to the roadway, the great car falling on top of their unconscious forms and crushing their bodies into a pulp. A tire had been torn off and before human hands could make a move to stem the disaster the destruction of the racing machine and its occupants was complete. Near Eu the Weigel car rounded a turn badly, upset and hurled Harrison, its driver, into the embankment. He was conveyed to a neighboring hospital tent and attended by physicians. Harrison was badly shocked and severely injured, but will be convalescent in a few days.

If despair due to accidents, failure of cars to maintain the desired speed and other circumstances seized Salzer, Szisz, Lancia, Wagner, Cagno, Jarrott, Jenatzy and others, misery was the whole portion of Nazzaro, who had set his heart upon beating an average of 70.05 miles an hour.



GRAND STAND FROM WHICH SPECTATORS VIEWED THE GRAND PRIX



SIZAIRE-NAUDIN, SECOND IN VOITURETTE RACE

Tire troubles in the third round, together with a jammed clutch, put the hero of the 1907 grand prix into the slough of despond. His work in the opening round, in which he fought it out side by side when the roadway permitted this desperate racing with Salzer, the pair circling the course in the initial round in the heartbreaking time of 36:31 for 48 miles. This is at the rate of 126.5 kilometers an hour, and if it had been maintained all world's records would have appeared insignificant beside this one. But this was not the limit of the efficiency of the Fiat. In the second round the mighty Nazzaro, who seemed fearless, fought his way to the front. A great favorite among thousands in the crowds, the Italian started out to open a gap that would make his lead commanding. But he figured without the cost on tires. Szisz, Thery, Bablot, Wagner, Salzer and an Italian and a German driver who had tested out Nazzaro's boldness in the awful drive in the opening round, sharing with him the honor of breaking last year's record for a circuit, also found the effect upon the tires was tremendous as well as dangerous.

The morning of the grand prix opened fair and favorable, the light breeze that tempered the air giving promise of a day as pleasant as the preceding one had been when the voiturettes had their struggle. All the contestants were brought into orderly sequence according to numbers, under the direction of the trained attendants, while the representatives of the department of war with their field telegraph apparatus gave the final instructions to the soldiery. Closed to the racing cars for more than a week, the course had been treated with a preparation of tar and never was in better condition.

Lautenschlager a Dark Horse

"Made in Germany" was a phrase conveying little beyond a sentiment of pride for another country with the hundreds of thousands of Frenchmen. "Germany has been out of a prominent position in the great motor racing world for years," said the adherents of the Panhard and Brazier.

"Poof, poof, the Fiat under Lancia, Nazzaro and Wagner has this contest in its grasp," was the strain from the Italians, with a considerable number of the experts from the sunny clime pinning their faith directly to the Itala car with Cagno, Fournier and Placenza as pilots.

As for Lautenschlager, the handsome man who had one of the Mercedes cars in charge, there were few to pay him homage in the dawn hours. What a difference 6 hours made with this German. M. Maujan, undersecretary of the department of the interior, personal representative of President Fallieres, was glad, apparently, to bow his respects to the hero of the hour. It was no sacrifice of national honor for this high official to direct that the musical salute written boldly in French aria style in honest anticipation of a French victory on French soil, be transposed instantly into the familiar tune of the Rheinland.

Germany had repeated its victory of years ago gained in sanguinary traversing of French soil, followed by the exacting of a great gold treasure, but this time the triumph had come with steel steeped in oil, not blood; with hickory wood fashioned into spokes, not rifle butts; with essence as fuel, not gunpowder—but with the same stolid, patriotic and obedient character of man at the head of the mechanical invasion as the man in panoply of war. "Hoch der Kaiser" sounded

ROAD SIGN—A LEFT HAND TURN

HEATH IN A PANHARD PASSING CAILLOIS AT LONDINIERES IN TRAINING

just as loudly from the throats of Frenchmen, Britons, Italians and Americans gathered at the official stand as it did when uttered by alien forces, but there was a cadence about today's shouts that was interpreted by the visitors in this country that spelled out "wholesome competition."

Desperate Effort by French

Lautenschlager undoubtedly profited immensely by the trouble encountered by Nazzaro, taking the lead when the Fiat got into distress. After that the Mercedes plugged around the circuit like mad, steadily and with little tire trouble, no contesting car seriously menacing its lead. Szisz in a Renault and Duray in a Lorraine awoke to the desperate nature of their task when the German had the lead and made a terrific drive to get the first place. Thery, hero of the Gordon Bennett cup race of a few years ago and the man upon whose veteran experience many pinned their faith, was unable to achieve a commanding place. The Germans! The latter seemed to have monopolized every favorable position. There were Germans in front of him, but none behind him!

THERY, ONE OF THE OLD GUARD.

Thery found Frenchmen ahead of him in the fourth round, his compatriots Hemery and Hanriot having passed him. But they were at the wheels of German cars! Tire troubles marked the veteran's car. It was no use. The Germans seemed immune from tire troubles. And Thery constructively gave up the ghost. France was

STRANG, AMERICA'S REPRESENTATIVE

robbed of its only chance to show its colors in front in the seventh round.

But Regal, at the wheel of a Bayard-Clement, had not given up hope. He kept the bonnet of his car headed in the center of the roadway with all speed on even the bad turns, managing to get the honor of fourth position at the finish and to be the recipient of the only strains of the French national air that came from the side of the presidential box. He finished the long route in 7:30:36, nearly 46 minutes after Lautenschlager had earned the title of hero of the Dieppe circuit. Two minutes behind Regal came Poegge piloting another Mercedes, while another "Made in Germany" car, the Opel, with Joerns at the wheel, followed the Mercedes into sixth place about 7 minutes later.

Erbe, at the wheel of the second Benz car to finish, was compelled to accept seventh place and have his time for the race posted as 7:43:31. Dimitriewitch, piloting another Renault, finished the course with scarcely a cheer for him, taking eighth place in 7:54:12. Heath, with the Panhard that escaped the fate of Cissac's car, came next, a minute later. The order of finish of the remaining cars was:

Car and Driver.	Time..
Germain, Perpere	7:59:08
Itala, Cagno	8:07:56
Bayard-Clement, Gabriel	8:11:44
Motobloc, Courtade	8:12:42
Motobloc, Garcet	8:19:56
Renault, Caillois	8:19:57
Mors, Jenatzy	8:24:04
Mors, Jarrott	8:39:20
Austin, Brabazon	8:42:50
Austin, Resta	8:46:50
Itala, Fournier	8:47:20
Opel, Opel	9:08:11
Germain, Degras	9:13:34
Panhard, Maurice Farman	9:24:40

Guyot Wins Monday's Race

Motor history may assign larger letters and bigger numbers to the racing cars that participated in the grand prix, but the keen, thoughtful manufacturers of France are devoting more than ordinary attention to the marvelous results of the voiturette contest in which there were forty-seven starters out of an entry list of sixty-four and thirty-two finishers, including eight complete teams. France monopolized the first five honors of the voiturette race, not

NAZZARO, WINNER OF 1907 GRAND PRIX

JENATZY IN MORS TAKES S TURN NEAR LONDINIERES WHILE TRAINING

so much because forty of the entries were of French construction, say the critics, but because France is excelling the world in the manufacture of these little cars that perform what the designers confidently predicted they would do. Besides the care that the authorities had given the course set aside for the voiturettes had not sufficed to keep the stock touring cars from cutting up the roadway in places and the final stages of the subordinate struggle. The start in the curtain-raiser was taken for granted, many thousands preferring to have late breakfasts and still be in time for the crucial rounds.

It would require a bold use of the word to describe the voiturette race as thrilling —rather was it most interesting, while the going for the little cars was less advantageous than it was the following day.

While only a comparatively small crowd was out at the start of the small car event, fewer than 1,000 persons being seated on the monster grand stand, the crowds began to arrive before the third hour and it is estimated that fully 200,000 witnessed the the astonishing average of more than 50 miles an hour was recorded, the cars did not seem to be tearing up Mother Earth as did the racers in the grand prix. The Delage car which took first honors had two mates in a team in the race, while three cars each of the following teams were also in the contest: Gregoire, Le Mebais, Lion, Werner, Roland, Pilain and Sizaire-Naudin. Guyot seemed to set his pace for an aver-

CISSAC, KILLED IN GRAND PRIX

age of 80 kilometers or 4 more than Thery's average in the coupe international at Auvergne. The motor of his car is a double-cylinder and the official time for the course was 5 hours 45 minutes 30 seconds. Victory came to the winner not wholly because it was the speediest in the contest, but because of the remarkable regularity of Guyot's pace. A single-cylinder Sizaire-Naudin, that finished second, piloted by M. Naudin, in 5 hours 52 minutes 6 seconds, at times showed wonderful bursts of speed. The Lion-Peugeot, a single-cylinder car, driven respectively by Goux and Dugernoy, finished third and fourth, the first being only 4 minutes behind Naudin's car. Fifth place went to a Delage car with Thomas at the wheel. All were fitted with Michelin tires, which gives the makers of these tires the distinguished honor of having five leading cars in the small car race and the three leading cars in the grand prix—itself enough of a French triumph to assuage some of the grief of the patriots for the loss of high honors in the long race.

The regularity cup, a trophy much prized by the winners, was awarded to the Delage manufacturers because their team was adjudged to have made the best showing.

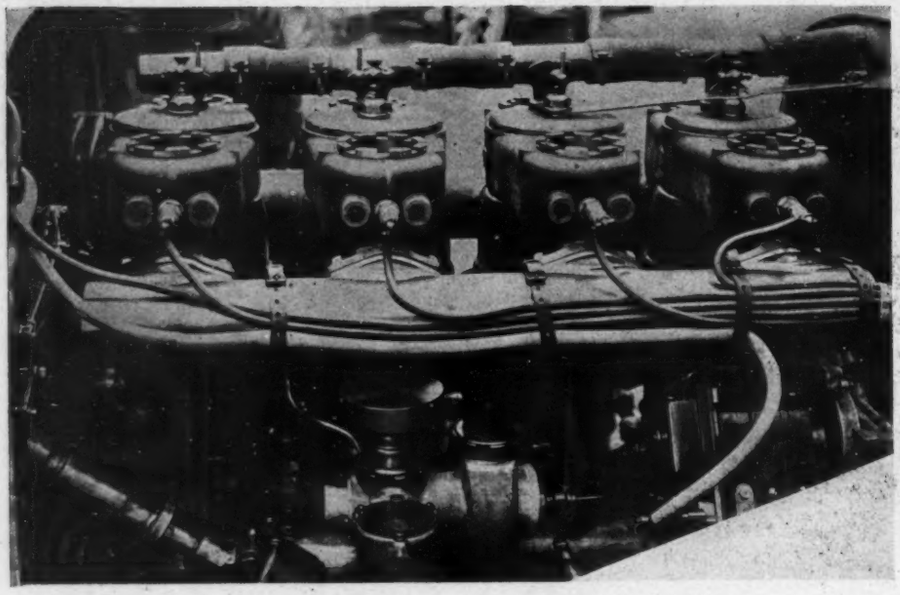
Accidents were comparatively numerous but none was serious. Five machines overturned, the drivers escaping bad injuries. The first to meet disaster was the Truffault, driven by Charles. This struck the bridge at Ancourt and was almost destroyed, the driver escaping miraculously with only a few bruises.

Martini, driving a Demeester, struck a bridge at Eu where the fatal accident of today occurred and the car was overturned. The driver was badly cut about the head and shoulders. Prompt medical attendance put the wounded driver in a good frame of mind and he made light of his accident.

At Maux another accident marred the contest, Bordes, in a Guillemin, turning over at the turn. Martini's machine overturned without doing the driver much damage and St. Mare broke a wheel.

SZISZ, WINNER OF 1906 GRAND PRIX

NAUDIN, A VOITURETTE DRIVER

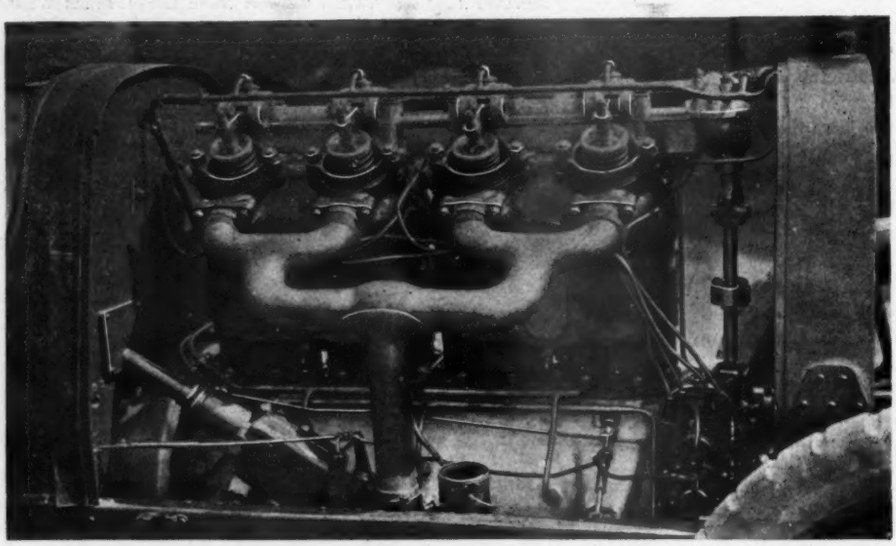


RIGHT SIDE OF THE PANHARD-LEVASSOR MOTOR

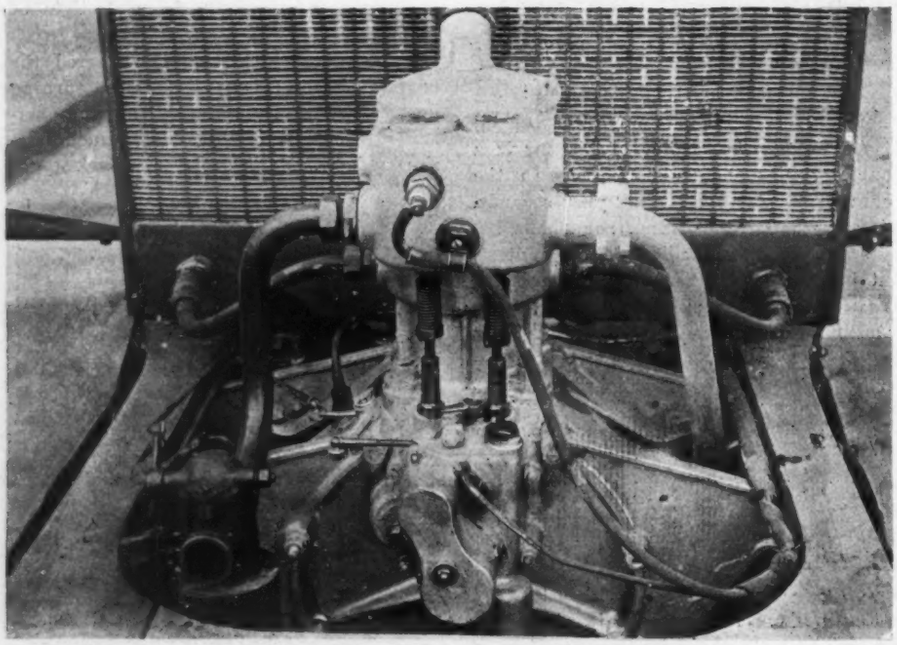
Features of the

All of the remaining forty-three cars are four-cylinder creations, and practically every one of them has made use of the 6.1-inch bore; but many are the vagaries in the length of the stroke. The majority of them, however—in fact, all of them, with the exception of the Thomas Flyer, the sole American representative—have the stroke much in excess of the bore, which is a new departure in motor construction for racing machines and which was very conspicuous in the recent Prince Henry tour in Germany. Here are a few of the stroke lengths, and the reader can compare them with the 6.1-inch bore: Benz, 6.4; Brasier, 6.6; Bayard-Clement, 7.2; Fiat, 6.8; Germain, 6.6; Itala, 6.2; Lorraine-Dietrich, 6.8; Mercedes, 6.6; Motobloc, 6.6; Opel, 6.2; Panhard, 6.6; Renault, 6.2; Weigel, 6.6; Mors, 6.6; Thomas, 6.69.

NOTHING could have had a greater effect on the status quo of the forty-nine grand prix racers for the present season than has the limitation of the cylinder diameters and the unlimited piston stroke permitted. This year 155 millimeters or 6.1 inches is the cylinder diameter permitted for the four-cylinder car, and 127 millimeters or 5 inches flat the diameter permissible for a six-cylinder machine. The results of this limitation are that the six six-cylinder cars entered, namely, the three Austin machines representing England, and the three French Porthos machines, have not exceeded this 127-millimeter limit. The Porthos comes to this exactly, while the Austin has been content with 125 millimeters. On these cars the Austin uses a 4.9-inch stroke and the Porthos a 4.7, these being the shortest-stroke engines in the race.



RIGHT SIDE OF THE BAYARD-CLEMENT MOTOR



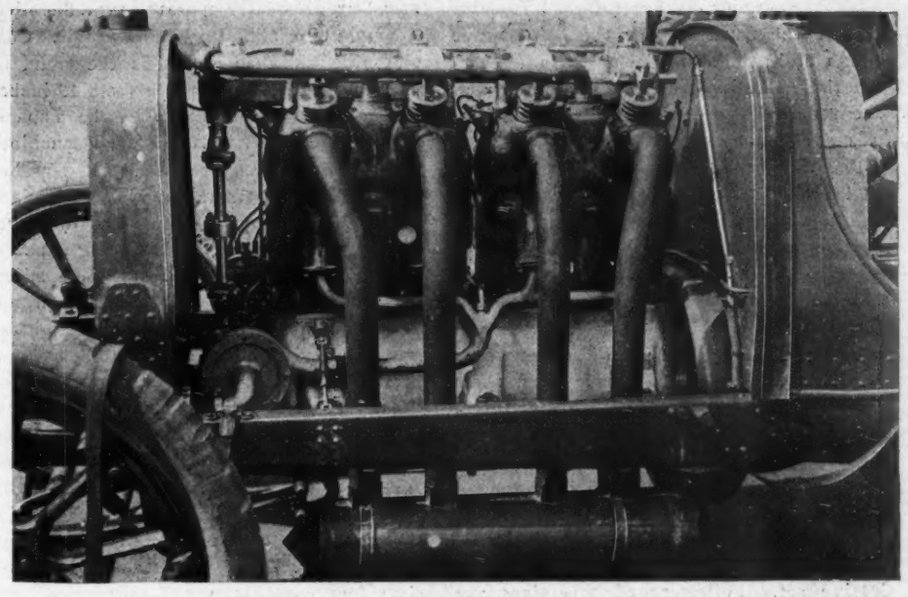
MOTOR USED IN THE PASSE-PARTOUT VOITURETTE

The horsepower ranges from 80 in the Thomas to 123 in the Fiat and Lorraine-Dietrich. One hundred and twenty horsepower is the popular figure, this being the rating of Mors, Weigel, Panhard, Motobloc, Mercedes, Germain, Bayard-Clement, Brasier and Austin; the remaining cars are 115 and 110.

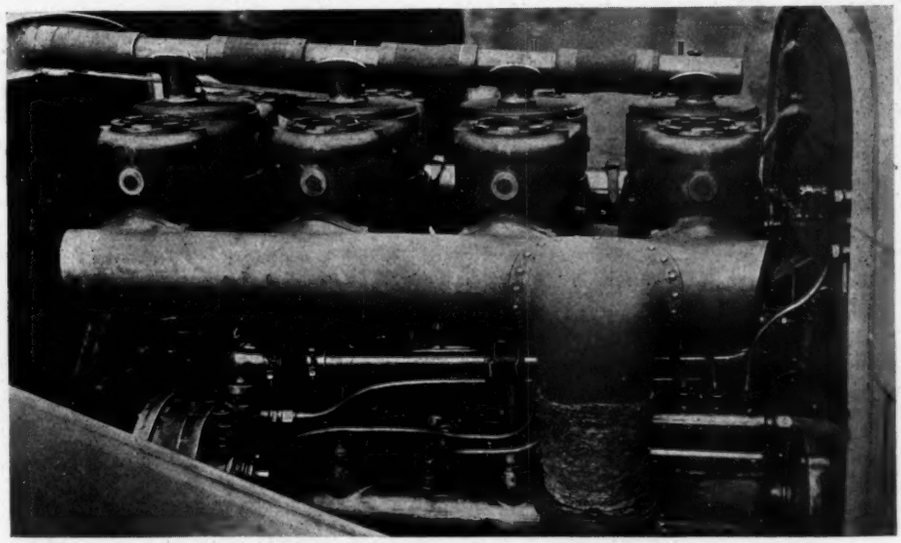
Second in importance to the long-stroke engines is the return of a few of the old-time builders to side-chain drive, conspicuous among which is the Panhard car so fitted, these machines of late having been fitted with shaft drive for racing purposes. In defense of the chain-drive situation for high-powered racing cars are the statistics, which show that in the twenty-five big road race events now constituting the backbone of European road racing fourteen were won by chain-driven machines and eleven by shaft-drive. The shaft-drive exponents in this year's run are Austin, Bayard-Clement, Itala, Porthos, Renault and Weigel, a total of six makes, as compared with eleven pinning their

Grand Prix Cars

faith to side-chain for motor cars. Many of the continental racing enthusiasts have an additional interest in the race this year because of the introduction of the hemispherical combustion chamber in place of the box-like type heretofore considered standard. It is interesting to note that the seeds sown by that eminent English gasoline motor engineer, Dugald Clerk, are already bearing fruit in such factories as Bayard-Clement, Fiat, Itala, Motobloc, Weigel, Benz and Mercedes, and in the Renault factory, where the combustion chamber is approximately but not exactly hemispherical. Continental makers are more and more coming to the conclusion that responsiveness is a great feature in the motor of a racing car, and this can be vastly increased by making the combustion chamber semi-globular and further



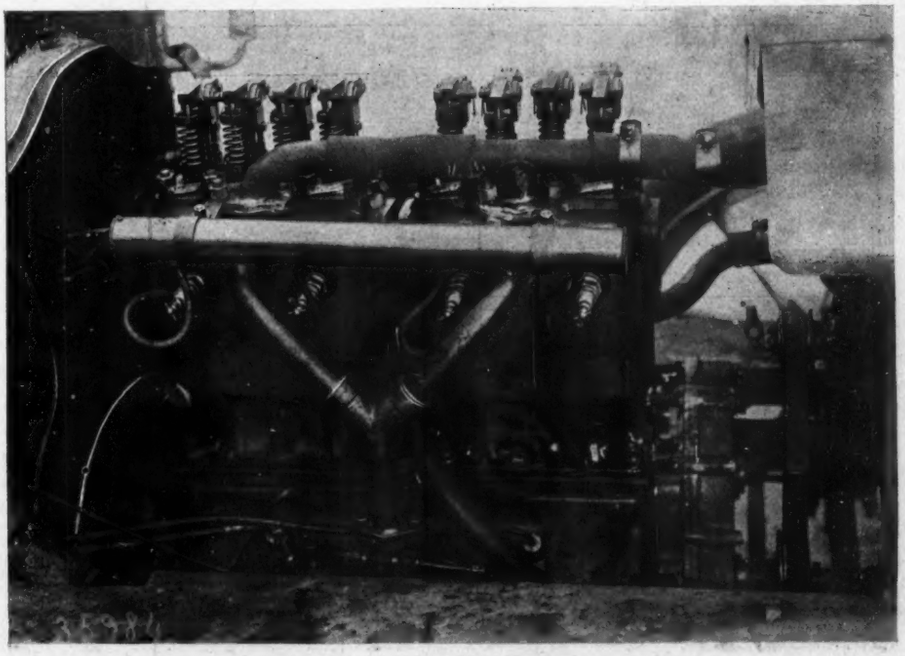
GENERAL VIEW OF THE BAYARD-CLEMENT ENGINE



SHOWING LEFT SIDE OF THE PANHARD ENGINE

increased by placing the valves in the cylinder domes instead of locating them in the floors of offsets on the right and left sides of the cylinder castings. The Bayard-Clement engine, illustrated on these pages, is a typical example of the valve-in-the-head proposition, together with the overhead camshaft. Equally noticeable in this motor is the transverse forward shaft carrying the magneto on the right and the water pump on the left. Care has been taken to entirely inclose the camshaft with its gears and cams throughout its entire length, as well as to fit a universal joint at the forward end of the motor which drives the camshaft from the front end of the crankshaft. The cooling fan has been eliminated in this motor.

It is difficult to say whether low-tension or high-tension is victor in the fight for ignition supremacy, the general assumption being, however, that the high-tension is on the winning road. Of the forty-nine cars thirty-four have high-tension magneto ignition fitted and fifteen low-tension. The Mercedes cars continue, as last year, in the high-tension ranks; the Motobloc has joined these ranks during the last year; while the Brasier and Lorraine-Dietrich have shifted over from high-tension to low-tension. The Mors car, which has not been in the racing field for some time, but which has reëntered it this year, uses the low-tension system. The Thomas is fitted with an Eisemann magneto with an Atwater Kent system in reserve. While the Bosch magneto is fitted on practically forty of the cars, the Nilmelor is used on the Motobloc and Panhard cars, and the Eisemann on the Thomas. The Renault continues as the only example of the thermo-syphon circulation. In carburation the majority of the concerns have adopted a carbureter of their own design, the majority of them being laid out on the perpendicular air current style. The Panhard uses its hy-



MOTOR USED IN THE DEMEESTER VOITURETTE

draulic governor as heretofore. Twenty-one of the machines use the leather-face cone clutch; the Mercedes employs its characteristic Lindsay spiral spring clutch, and the remainder use multiple disk clutches of one style or another.

American makers may perhaps find a little consolation in the fact that Europeans, who are adepts at road racing, have been gradually working to the shorter wheelbase. The Mercedes cars that were 111 inches in wheelbase last year are 105 this year; Panhard was 111 last year and has cut to 103 inches, a measurement which is also used on the Motobloc cars. The popular wheelbase measurements are 105, 107 and 108 inches; the Mors are the shortest, measuring 102 inches, and the Porthos the longest with 125 inches.

Few changes have been made in the transmission system, the great majority of the makers relying on a four-speed selective set. Followers of this class are Austin, Benz, Bayard-Clement, Fiat, Itala, Lorraine-Dietrich, Mercedes, Motobloc, Opel, Panhard and the Thomas. Three-speed selective is used in the Weigel, Porthos, Germain and Brasier. The three-speed progressively operated type finds but a couple of users, Mors and Renault. Considerable variance occurs in the tread of the machines, these varying from 49 inches in the Mors to 56 inches in the Thomas and Weigel. With the French machines 50 and 52 inches are the most popular.

In the voiturette race which took place over the grand prix course the day previous to the big event, embracing six laps of the circuit, or a total of 288.04 miles, much more latitude in motor design appears, and it will not be in the slightest surprising to find many of the 1909 grand prix machines patterned in many minor details after the little car, or voiturette, as it is called in France. For this little race the cylinder diameter was limited as follows: In a single-cylinder car, 3.93 inches; in a two-cylinder car, 3.07; in a three-cylinder car, 2.67; and in a four-cylinder car, 2.44. The majority of the sixty-four entrants were of the vertical two-cylinder type, single-cylinder ones were numerous, and but few four-cylinder types appeared. It is worthy of note that in a great many of the single-cylinder cars a De Dion motor is employed. A few of these little cars are: Four-cylinder Isotta-Fraschini, with cylinders cast in en bloc, with a bore of 2.36 inches and a stroke of 3.93. It has a three-speed transmission. The Fouillaron is a typical representative, using the single-cylinder De Dion motor with a 3.93-inch bore and 5.9 stroke. The car employs a leather-faced cone clutch and transmits by shaft to the back axle. The Sizaire-Naudin has a single-cylinder 16-horsepower engine with 3.93-inch bore and 6.29-inch stroke, this being one of the many examples of the exceptionally long-stroke type. A good example of the two-cylinder car is the Alcyon with its 3.07-inch bore and 5.9-inch stroke. It is fitted with a high-tension magneto, a three-speed transmission, and, like the Sizaire, uses wire wheels. The Delage is another example of the single-cylinder type characterized by low-tension ignition and thermo-syphon circulation. Another car of this name is entered, but it is of the two-cylinder type. A contestant not familiar to American readers is the Roland-Piland, which uses a four-cylinder motor with 2.4-inch bore and 3.9-inch stroke.

MECHANICAL FEATURES OF THE CARS THAT TOOK PART IN THE GRAND PRIX

Car	Drivers	Engine	Stroke	H. P.	Carbureter	Cooling	Ignition	Clutch	Transmission	Drive	Track Inches	Wheel base Inches
AUSTIN, England....	Moore Brabazon Resta Wright	6 cylinders, cast in pairs	4.9	120	Parallel currents	Centf'l pump, Austin radiator	H. T. magneto	Leather cone	Sel. sliding gear, 4 speeds	Shaft	52	107
BENZ, Germany.....	Hemery Hanriot Erbe	4 cylinders, in pairs, dome heads, valves at 45°	6.4	110	Perpend currents	Centf'l pump, honeycomb radiator	H. T. Bosch magneto	Leather cone	Sel. sliding gear, 4 speeds	Side chains	52	108
BRAZIER, France....	Thery Baras Babiot	4 cylinders, in pairs,	6.6	120	Converg. currents	Centf'l pump, tubular radiator	L. T. Bosch magneto	Leather cone	Sel. sliding gear, 3 speeds	Side chains	52	107
BAYARD CLEMENT, France	Rigal Gabriel Hautvast	4 cylinders, in pairs, dome heads, single overh'd camshaft	7.2	120	Bayard-Clement	Centf'l pump, honeycomb radiator	H. T. Bosch magneto	Metallic disk	Sel. sliding gear, 4 speeds	Shaft	50	106
FIAT, Italy	Lancia Nazzaro Wagner	4 cylinders, in pairs, dome heads, single camshaft	6.8	125	Perpendic. currents	Centf'l pump, honeycomb radiator	L. T. Bosch magneto	Metallic disk	Sel. sliding gear, 4 speeds	Side chains	50	107
GERMAIN, Belgium..	Degrais Roch-Brault Perpere	4 sep. steel cylinders, copper jackets, valves opposite sides	6.6	120	Single nozzle, without ad'nal air	Centf'l pump, honeycomb radiator	H. T. Bosch magneto	Expand. metallic	Sel. sliding gear, 3 speeds	Side chains	52	119
ITALA, Italy,.....	Cagno Fournier Piacenza	4 cylinders, in pairs, dome heads	6.2	115	Perpend. currents	Centf'l pump, honeycomb radiator	L. T. Bosch magneto	Metallic disk	Sel. sliding gear, 4 speeds	Shaft	54	118
LORRAINE-DIETRICH, France.	Duray Rougier Minoia	4 cylinders, in pairs,	6.8	123	Perpend currents	Centf'l pump	L. T. Bosch magneto	Metallic disk	Sel. sliding gear, 4 speeds	Side chains	52	107
MERCEDES, Germany...	Salzer Poogge Lautteschlager	4 cylinders, in pairs, dome heads	6.6	120	Perpend. currents	Centf'l pump, honeycomb radiator	H. T. Bosch magneto	Lindsay spiral spring	Sel. sliding gear, 4 speeds	Side chains	52	105
MOTOBLOC, France..	Courtade Pierron Garcet	4 cylinders, in pairs, flywheel in center dome heads, overhead valves with single camshaft	6.6	120	Perpend currents	Centf'l pump, honeycomb radiator	H. T. Nilmelior magneto	Metallic disk	Sel. sliding gear, 4 speeds	Side chains	50	103
OPEL, Germany.....	Opel Joerns Michel	4 cylinders, in pairs	6.2	115	Converg'nt currents	Centf'l pump, honeycomb radiator	H. T. Bosch magneto	Leather cone	Sel. sliding gear, 4 speeds	Side chains	52	103
PANHARD-LEVASOR, France.	Heath Maurice Farman Cissac	4 sep. steel cylinders, copper jackets, valves opposite sides	6.6	120	Automatic hydraulic regulator	Centf'l pump, honeycomb radiator	H. T. Nilmelior magneto	Metallic disk	Sel. sliding gear, 4 speeds	Side chains	50	103
PORTHOS, France...	Stricker Gaubert Simon	6 cylinders separate	4.7	95	Automatic Porthos	Centf'l pump, honeycomb radiator	H. T. Bosch magneto	Leather cone	Sel. sliding gear, 3 speeds	Shaft	52	125
RENAULT, France..	Szisz Caillois Dimitriewitch	4 cylinders, in pairs, valves one side	6.2	115	Perpend. currents	Copper tube radiator on dash; thermo-syphon	H. T. Bosch magneto	Leather cone	Progressive sliding gear, 3 speeds	Shaft	50	105
THOMAS FLYER America.....	Strang	4 cylinders, separate; valves opposite sides	5.7	60	Perpend. currents	Gear-driven pump, cellular radiator	H. T. Eiseman magneto; Atwater K't generator	Metallic disk	Sel. sliding gear, 4 speeds	Side chains	56	112
WEIGEL, England ...	Laxen Harrison Coleman	4 cylinders, one casting, dome heads, valves at 45°	6.6	120	Parallel currents	Centf'l pump, honeycomb radiator	H. T. Bosch magneto; stor. batteries	Leather cone	Sel. sliding gear, 3 speeds	Shaft	56	111
MORS, France.....	Jenatzy Jarrott Lancon	4 cylinders, separate overhead valves	6 6	120	Automatic	Tubular radiator gear driven pump	L. T. Mors magneto	Leather cone	Progressive sliding gear, 3 speeds	Side chains	49	102

GRAND PRIX DRIVERS AND DIEPPE CIRCUIT

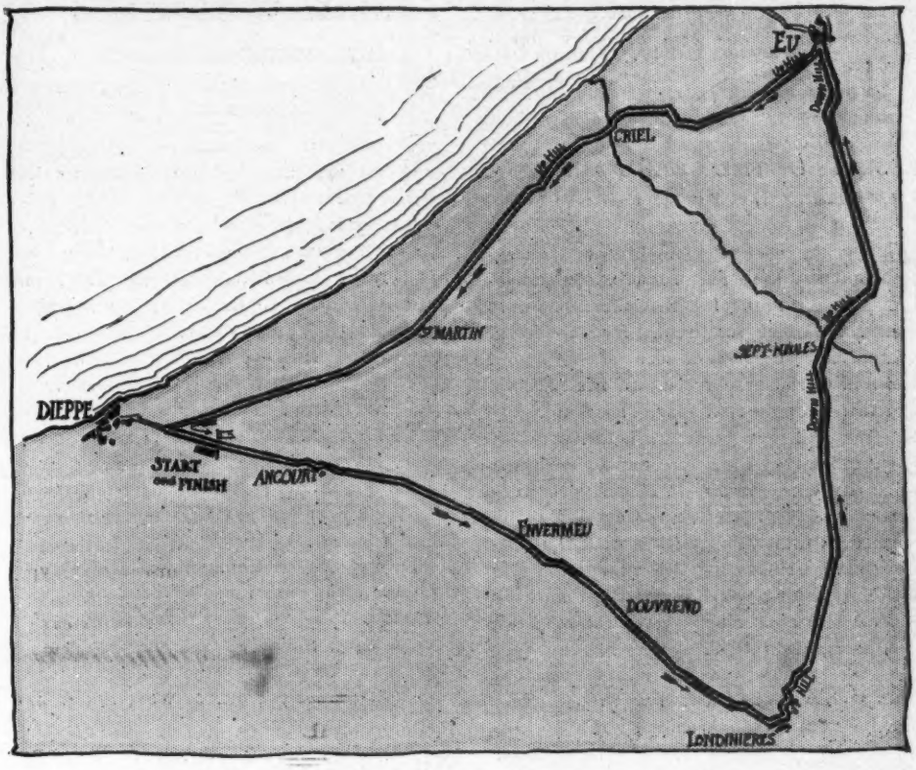
STRANGELY enough, no French prognostication of the outcome of the 1908 grand prix took the winning driver, Herr Lautenschlager, into consideration. For weeks the motoring experts busied themselves dividing the principal drivers into groups, basing their classifications on the temperament of the men and their resourcefulness in driving, on the titles daredevils, cool bloods or cool heads and prudent ones. Lautenschlager did not get a place in any of these divisions.

Those who were said to be in the first class—men who threw prudence to the four winds and cared not what they did so long as they could win, were Wagner, Salzer, Poege, Duray, Baras, Nazzaro and Lancia. The cool heads were tabulated Caillois, Cagno, Hemery, Heath and Thery, while the prudent, careful drivers were said to be included in the following list: Rigal, Hautvast and Cissac. The first, it appears, was the French driver who pushed up into fourth place while Cissac was killed. Nazzaro made the speed on the first round marvelous and was followed by Salzer and four others, but there are many who do not agree with the general French characterization of the Italian as a daredevil. They instance the fact that he always finished in his races up to this year, failing only in the Targo Florio and the grand prix of 1908. Since winning the Vanderbilt, Hemery has developed the faculty of showing meritorious coolheadedness in his contests, his victory in the Moscow-St. Petersburg road race calling forth all his resourcefulness on a long public highway.

Thery showed he has lost none of his old-time skill by hanging on doggedly, although heavily penalized by tire troubles, until he finally had to give up the gallant struggle to put France's colors in the lead. After winning the Gordon Bennett Thery said he would not take part again in any more competitions, but the call of the 1908 grand prix caught him and his presence among the distinguished veterans helped to add much eclat to the race.

Wagner, too, has Vanderbilt cup honors to bear and he did not drive like a daredevil in the grand prix. Fortune did not favor him, however, and his skill and ability to get the last ounce of power out of his car was of little use when his Fiat refused to go the route. Heath, also a Vanderbilt cup winner, had the wheel in a Panhard, and this, like other French entries, gave up the struggle after the Germans got the commanding positions.

Although the road surface of the Dieppe circuit was as perfect as human skill could make it, the drivers all knew that piloting a car on the 47-mile triangle was not a mere matter of opening the throttle and letting the machine run. From the grand stand start and finish point to Londinieres, the first leg, there is a straightaway where



MAP SHOWING DIEPPE CIRCUIT USED IN GRAND PRIX

a speed of 100 miles an hour is not at all an impossibility. The turns and descents are inconsequential in the journey to Envermeu, where the soldiers barricaded the streets, leaving a wooden bridge for the populace to cross the road. Thence to Londinieres the road is varied—a few miles of straightaway, just enough turns on down grades to keep the drivers alert and nothing serious to bring out rare driving qualities being noted. But at Londinieres there is a double S turn over the railroad tracks, followed by a long, winding rise. Fortunately for all concerned, however, on the day of the race the government puts its ban on railroad traffic and the danger from collision with trains is eliminated. This is the most difficult spot on the course for a driver to negotiate the road in safety, but it also is the place that all the drivers familiarized themselves with by constant driving. Ability to drive at that point counted for much time saved in the actual race.

After passing this double S turn, a winding climb comes to give the car and the driver some trouble, the ascent continuing for 3 or 4 miles. The drivers drop into third speed here and ability in getting the most out of a car that has had its known powers for hill-climbing explained to the man in charge, invariably has been an asset at this point in the triangle.

Half way around the second leg there is a diversity of course that makes for excitement, first a sharp descent and then a short, stiff hill-climb followed by a straightaway. Going into Eu there is a rapid descent and at the foot of this hill a wide hairpin turn has to be made through the center of a famous old market place. After this the driver must negotiate a 12 per cent grade and for 5 miles the roadway is so diversified, up hill and down dale that brakes occasionally have to be applied and the change speed lever has to be operated.

After passing Criel on the third leg, the driver finds a favorable opportunity to work the throttle and for 10 miles it is possible for him to open the gas supply to its limit with only an occasional shut-off. On the last few miles of the home stretch leg the drivers may look away to the left or opposite side of the triangle over the grand stand. But 3 miles out from Dieppe he encounters the famous hairpin curve that calls for closing down, although the roadway is wide enough for a careful driver to get around without danger. One mile further and the driver arrives at the stand.

The managers of the grand prix made a change in the stands this year that proved to be not only a pleasing one but a valuable one for the throngs that attended the contest. The stands which last year were a couple of miles from the Dieppe hairpin and on the seashore stretch of the road, were moved over to the opposite side and were on the outside of the course with a northern view and open to the sea breezes. This change not only permitted the spectators to view the contestants on the long straightaway in front of the stands, but to look across the country.

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RESULTS OF THE GRAND PRIX

T LAST, poor France, we told you so! After having been successful in killing the Bennett cup race it is not unnatural for America now to look for France to discontinue the grand prix because of Italy's sucess in it a year ago and Germany carrying off first, second and third honors this year. The grand prix was and still is, we think, a pet creation of the Automobile Club of France, designed primarily with the object of giving France immeasurably greater representation in its road races than was possible with the Gordon Bennett rules. Critics interpreted this action as a long step toward the regaining of France's supremacy in the racing field, this assumption being based on the fact that the premier event in international road racing would be a big French race. The last 2 years has shown France's abnormal representation has not been equal to the situation and Germany with its scanty entry and Italy with its equally small one have been instrumental in working the latest revolution on road racing.

Rumor has it that the French makers were this year attaching more importance to the voiturette race, which took place the day previous to the grand prix, than to the grand prix itself, the reason for this being found in the exceptional interests French makers have taken of late in the small car. This seems to bear out the contention made in these columns within the last 2 weeks that the small car is destined to supersede the seven-passenger machine for city and average country use; and it may be that the present road racing situation is but the handwriting on the wall of the inevitable. Next year we may look for the voiturette race to be the premier road event not only of France but of the international racing world; and, bearing out this assertion, is the unanimous support the Thompson cup stock chassis race is receiving at the hands of the American makers. It will not be at all disappointing if the stock chassis race entirely supersedes the Vanderbilt. When such conditions as this arrive the result to the industry will be phenomenal in that it will place the mark of approval upon a type of machine that must be the ultimate climax of motor car design in this country, namely, a machine adaptable and equal to the varied needs of the great masses of the American people.

Viewed philosophically from this standpoint, France's unpardonable attitude toward international road racing during the last 3 years can be transmuted into a halo, or literally translated into a great good for the motor industry at large. The voiturette race of this year, in which the winning two-cylinder car averaged 50 miles an hour over a 288-mile course and in which some single-cylinder cars made practically as good an average, is ample proof of the speed proclivities of machines of this type and their endurance is equally well indicated by their ability to withstand continued high-speed work of this nature. It looks very much as if the war of the cylinders might be relegated to a position held by it 3 or 4 years ago; the main factor in a successful motor car not being the presence of any particular number of cylinders but to the construction, the design and workmanship which enter into the make-up of the car. Races of this nature prove that the laurels go to the well-made car and perhaps not the one of what might be called latest design.

ASPECTS OF THE GLIDDEN

HILE the combined strength of the Glidden and Hower tours for this year is fifty-six as compared with sixty-three a year ago, the tour gives promise of being immeasurably more beneficial to the trade than what it has been heretofore, due primarily to the closer scrutiny which will be made by the committee in charge because of the presence of observers on the cars. With an observer on each contesting vehicle, it means that the running of a car into a friendly factory to repair certain parts during a day's run; the departure from the prescribed course in order to fix a new axle, and the visiting of back yards on farms in order to make certain repairs that it was most desirable to keep from the knowledge of the other contestants will be a thing of the past, and at the completion of the tour, providing the observers do their part, the motoring public in America will be aware of the exact performance of all the contestants throughout this strenuous contest promoted by the American Automobile Association.

There is not a question of doubt but that the tour has this year ceased to be a tour in the ordinary sense of the word and that it has entered the ranks of a reliability contest promoted solely for the benefit of the manufacturers and not conducted with the aim of providing a pleasurable trip for motor enthusiasts. Because of this change it would be better for the industry at large to designate it the "Glidden reliability or endurance contest." This change of character from a tour to a reliability contest is largely accounted for by the presence of observers who are supposed to be impartial reporters of the daily progress of the car. The value of the observer rests chiefly with the fact that evasions of the rules are not attempted when he is aboard and whatever is done by way of repairing or replacement to a car is reported. Experience has proven that without observers tours and reliability contests are of little value to motoring.

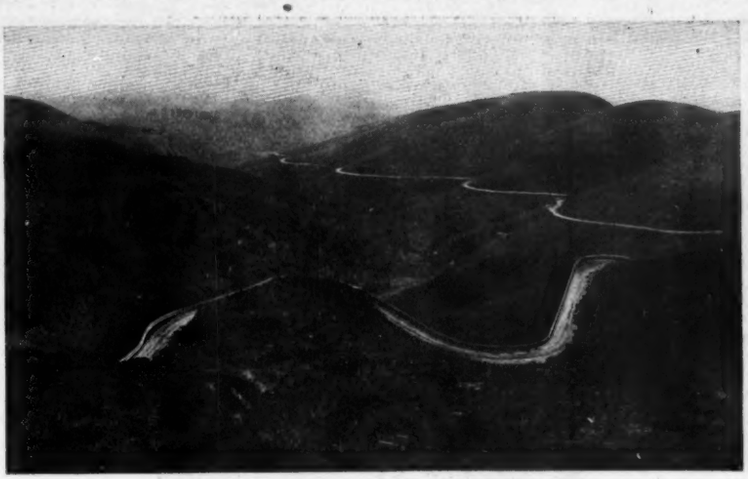
One year ago the sealed bonnet test was advanced as the substitute for the observer situation, but the great weakness in it lies in the fact that the breaking of a single seal results in disqualification, which is an unfair state of affairs. As events have shown, a car frequently has been disqualified because of breaking a seal that did not protect the vital part of it and the repairing of which called for but a moment's work. Disqualifications have been caused by cracked spark plugs and loose battery connections, neither of which is of sufficient import to put a car completely out of the running.

From a critical viewpoint the worst feature of the Glidden rules is the disqualification of a car for the replacement of a part not carried with the car from the start of the tour. Those familiar with touring are fully aware of the need of replacement of a small part which rarely gets in trouble—a part capable of replacement in 5 minutes, and not worth 25 cents. The replacement of this, however, if the needed part were not carried in the extra spares, would result in disqualification, whereas any country blacksmith could make it and replace it for the motorist in less than 10 minutes.

In transportation, time and safety are the cardinal factors and it seems possible and highly probable in touring contests of this nature to convert every break and delay into its time equivalent and penalize on failure along this line. A course of this nature would eliminate disqualification because of a slight oversight on the part or a little carelessness in equipping before the start of the run.

ROAD 3 MILES LONG WITH 120 TURNS IN IT

MAYBE there is a road somewhere in the world that is more crooked than that which starts at the outskirts of Berkeley, about 4½ miles from the University of California, and after 3 miles of tortuous windings, dodges into a tunnel, and there passes from Alameda to Contra Costa county. Maybe there is some other road more crooked than this; if there is the Californians want to know it. This road was but recently completed, and constructed in order to overcome the stiff grade of the old county road, known as the Fish ranch road, and which starts about where the new does, and meets it beyond the tunnel.



SHORT ROAD NEAR BERKELEY, CAL., FAMED FOR ITS MANY TWISTS

To draw a map of the new road is one of the easiest things to do according to directions. First draw something of a semi-circle, but more to conform to the outlines of one-half of a top. Make this outline out of about fifty V's. Make these V's a little different—some might be larger than others, and the length of the lines might be varied a little. For general purposes that will answer as a map of the 2 miles of the 3 leading to the tunnel. The first mile is not so bad, as the windings are but ordinary. According to the map in the office of the county surveyor, there are exactly 120 turns in this 3-mile road, but more than 100 are within that section just mapped out—a twisting, tortuous highway at all times, from a motoring standpoint this road is hardly a delight aside from the magnificent views secured from time to time. When it first starts to wind about the hills the view is into the distant hills and valleys beyond, but as one approaches the tunnel a new tack has been taken. Upon perfectly clear days one has a view of Oakland in the nearer distance, with the bay, San Francisco harbor and the city backed by a range of hills and then Golden Gate far to the westward. As one is then about 1,000 feet above sea level some idea of the magnificent panorama may be gleaned. There is just one stretch that the motorist can speed to his heart's content—for 320 feet. That is the longest straight stretch in the road. The next longest is 220 feet, the majority not being more than 100 feet long. In the 3 miles there are 120 turns, which makes an average of 131 feet for each stretch, but some of the stretches in the first mile are fairly long. The road has a 5 per cent grade, cost approximately $5,000 a mile, and is macadamized. It was done by day labor, and much of it consisted in hewing through rock. The tunnel is 1,050 feet long, is 16 feet high and 17 feet across. The work was done under the direction of E. C. Payther, now engineer for the Realty syndicate, which controls most of the land included in these foothills. East of the tunnel it is more delightful, as the road is closer to the bottom of the valleys, and continues eastward through a very delightful section of California, passing through a number of villages. The Alameda county authorities now have under consideration the construction of a magnificent boulevard close to the crest of the foothills. The road would be more than 1,000 feet high, and there is a uniformity in the height of this crest which would necessitate but few sharp turns. The road would naturally be winding, but gradual so that for the most part one could see a considerable distance ahead. The cost of constructing this boulevard would not be great, as road work in California is comparatively easy, anyhow.

FRENCHMEN INVESTIGATE MOTORDROME PROPOSITION

Paris, June 30—Auvergne is resolved to have the first motordrome in France, or, as they prefer to call it here, the closed racing circuit. Immediately after the Gordon Bennett race of 1905 the mountainous course in Auvergne was proposed as a permanent racing course, but owing to financial difficulties and the disinclination to give any one region the monopoly of motor races the matter was not pushed forward by the A. C. F. For the last 3 years the Automobile Club of Auvergne has boomed the scheme of a race course around the Puy du Dome, and has further studied the financial question. This week the local club invited the Automobile Club of France to the district in order to convince the national body of the practicability of the scheme and to give its officers an idea of the interest of the neighborhood in a motor race course. The competition committee, with Marquis de Dion at its head, accepted the invitation, traveled down to Clermont-Ferrand by special train, was taken up to the summit of the mountain by a special local and shown the proposed road on the way. From the summit of the mountain, 4,800 feet above sea level, a magnificent panorama unrolls itself in every direction. The road which it is intended to use as a motor course runs around the face of the mountain and is almost all visible from the summit. A small part of the projected course is the highway on which the Gordon Bennett race was held in 1905. Though all roads are made and in excellent condition, a considerable amount will have to be expended in barricading them, lighting and generally fitting for fast motor work. Clermont-Ferrand, best known to motorists as the home of Michelin and other tire factories, is at the foot of the mountain and within a short distance are a string of holiday resorts. If the project is accepted by the Automobile Club of France the land within the course will be fitted up for other sports. One of the objections made is its distance from Paris. As the majority of the motor car factories are located around the capital, before any use could be made of the course as a testing ground it would be necessary for cars to make a journey of about 240 miles, which manufacturers naturally consider excessive.

WHERE ROAD RUNS INTO TUNNEL

HOSTS GATHER FOR START OF GLIDDEN TOUR

BUFFALO, N. Y., July 7—On this, the eve of the fourth annual contest for the Glidden trophy, the usual condition of excitement reigns; competitors are arriving hourly from the dozen or more factories represented in the list of contestants. Press representatives from the different metropolitan journals are reaching the city on every incoming train, representatives from the several American tire factories have arrived already, and in short, from all sections of the land come special envoys, representatives of the different phases and departments of the motor industry, all going to swell the great caravan that will from July 9 to 23 meander its way over 1,670 miles of roads under the name of Glidden tour, promoted by the A. A. A.

CHAIRMAN FRANK B. HOWER

SECRETARY DAI H. LEWIS

A mile down Main street from the Iroquois hotel is the Teck Theater building, on the second floor of which are located the different managers to whom the contestants will look for the successful conduct of the contest. Chairman Frank B. Hower, of the A. A. A. touring board, in shirt sleeves, superintends the entire situation; Dai H. Lewis is the route and confetti encyclopedia; E. L. Ferguson is busied with the final arrangement of the entries, as well as bringing together the data and forms necessary for the daily dispatch and reception of the cars; Mortimer Reeves has his hands full with the role of assistant pilot, duties which are coupled with those of nightly garaging, or parking the cars; F. D. Stidham, chief of the observer brigade, is rapidly perfecting his outline plan for the placing of impartial observers on the cars each day, as well as assigning them so no observer rides in the same make of car, or in a car of the same team, or in a car handled by the same firm as nominated him; H. D. Herr is busied with the hotel accommodations which include the systematizing the work under Cook control, as well as the explaining of it to the different competitors; Arthur N. Jervis, the publicity end, is playing the role of a complete press room; Nathan Lazarnick, the official photographer, has everything necessary in the line of plates and films; Messrs. Conklin and Carroll, the night watchers, have had their instructions, and David E. Hoag, the official physician of the route, has all his plans perfected; so nothing remains but the inspection of the cars, the sealing of the regular spare parts in one tool bag, the sealing of the extra spare parts in another tool bag, and the sealing of large spare parts which cannot be carried in either of these bags, in the car itself. This done, it only remains for the cars, drivers and observers to do their parts during the long 12 days of the drive.

Statistically considered the Glidden-Hower tours are not so big as a year ago, but the loss in numbers is more than compensated for because of the fact that those cars entering have done so in spite of the $200 entry fee; in spite of the fact that impartial observers will be carried on each car, and also despite the fact that this year's tour leads through a generally mountainous and hilly district, the roads through which are largely composed of clay and gravel, which, if weather conditions are favorable, will make easy going, but if rains are frequent will result in the hardest kind of work for the contestants. Already thirty Glidden trophy cars are

STARTER E. L. FERGUSON

waiting to be dispatched by Ferguson Thursday morning, all of which will compete in clubs for the Glidden trophy. The thirty are divided among ten clubs; three cars in each case constituting a team in the contest.

Ten Teams in Glidden

It is up to these ten teams to fight out the contest as to which shall be the proud possessor of the Glidden trophy for the 1908-1909 season. It is apparent from the status of these ten teams that the winner for 1908 will be more of a factory than a motor club proposition. Of the ten teams six represent as many individual factories. The makers having this representation are Pierce, Peerless, Studebaker, Franklin, Marmon and Garford. The four mixed teams are the Haynes and Oldsmobile and the Rainier-Oakland combinations in the Chicago Motor Club; the Selden-Gaeth-Thomas combination constituting one of the Rochester clubs, and the two-to-one Premier-Reo team, forming the second Buffalo club. Three automobile clubs, namely, Buffalo and Rochester and Chicago, have entered two teams each, whereas a year ago the Buffalo club entered but one team, which was a combination of varied factory interests. It is expected on every hand that this one-factory team situation will add greatly to the interest in the tour and should one of these teams win it the factory can stand on the ground that its car

AUTOMOBILE CLUB OF BUFFALO, FIRST TEAM
No. 1—Pierce-Aarrow, Charles Clifton.
No. 2—Pierce-Aarrow, Charles Clifton.
No. 3—Pierce-Arrow, James McGuire.

AUTOMOBILE CLUB OF BUFFALO, SECOND TEAM
No. 4—Reo, R. M. Owen.
No. 8—Premier, R. M. Owen.
No. 9—Premier, H. O. Smith.

COLUMBUS AUTOMOBILE CLUB
No. 5—Peerless, E. H. Parkhurst.
No. 6—Peerless, E. H. Parkhurst.
No. 7—Peerless, E. H. Parkhurst.

ROCHESTER AUTOMOBILE CLUB, FIRST TEAM
No. 10—Gaeth, Paul Gaeth.
No. 11—Thomas, Gus G. Buse.
No. 32—Selden, R. H. Solomons.

CHICAGO MOTOR CLUB, FIRST TEAM
No. 19—Haynes, Frank H. Nutt.
No. 20—Haynes, Loring Wagoner.
No. 35—Oldsmobile, F. O. Smith.

CHICAGO MOTOR CLUB, SECOND TEAM
No. 15—Rainier, Mrs. Joan Cuneo.
No. 27—Oakland, J. B. Eccleston.
No. 28—Oakland, E. M. Murphy.

ROCHESTER AUTOMOBILE CLUB, SECOND TEAM
No. 24—Studebaker, E. V. Stratton.
No. 25—Studebaker, E. V. Stratton.
No. 26—Studebaker, E. V. Stratton.

AUTOMOBILE CLUB OF SYRACUSE
No. 12—Franklin, H. H. Franklin.
No. 13—Franklin, John Wilkinson.
No. 14—Franklin, F. H. Stillwell.

BAY STATE AUTOMOBILE CLUB
No. 21—Marmon, Frank E. Wing.
No. 22—Marmon, W. C. Marmon.
No. 23—Marmon, W. C. Marmon.

CLEVELAND AUTOMOBILE CLUB
No. 29—Garford, A. R. Davis.
No. 30—Garford, A. R. Davis.
No. 31—Garford, A. R. Davis.

won the Glidden trophy, which was an impossibility under the conditions of a year ago. On the other hand, with the remaining clubs that have mixed teams a different situation rules; should the Rochester combination team win Selden, Gaeth and Thomas will each have a third interest in the big trophy; if one of the Chicago Motor Club teams carries the winning colors it will be necessary to divide on a two-thirds and one-third basis; and should the second Buffalo team be the final winner R. M. Owen, the entrant of two cars, will have to look after the division of honors between Premier and Reo.

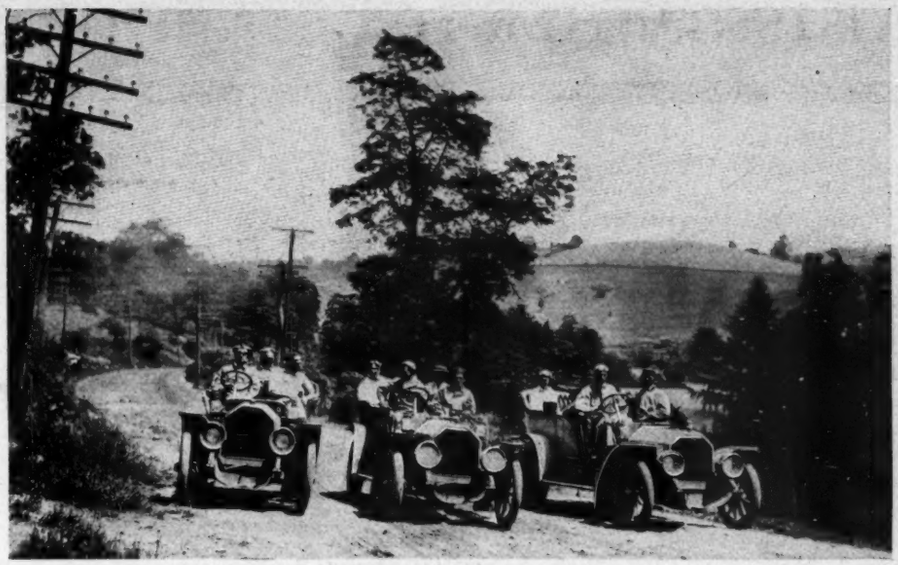
A year ago forty-six cars started out to strive for the trophy and although this year's number shows a reduction of nineteen, it is agreed on all hands that the interest will be more than double that of a year ago.

Fourteen in Hower Trophy

As heretofore, the struggle for the Hower trophy will be an individual affair, this trophy going to the car having the highest merit marks at the completion. The trophy will be contested for by fourteen runabouts as against thirteen in 1907; of these fourteen three are Stoddard-Daytons, two are Pierce Arrows, three Overlands, and one each of Franklin, Premier, Gearless, Moline, Reo and Bloomstrom.

In addition to this grand total of forty-four in the Glidden-Hower phase of the contest are two entrants that are contesting solely for Glidden certificates, the main reason for these competing under this classification being the impossibility of them to get in a club team. They are two Stevens-Dpryeas cars.

In addition are ten non-contesting cars, consisting of Reo Motor Age press car, a Packard press; an Oldsmobile entered by C. H. Foster and designated the Gabriel horn car; a Diamond tire car entered by N. E. Oliver; a Goodrich tire car entered by W. O. Rutherford; a Fisk tire car by E. H. Broadwell; a Premier press car by R. M. Owen, and a Reo Motor Age press car by R. M. Owen. Added to these are four official cars, No. 99, Chairman Hower's Pierce Arrow; No. 98 Dai H. Lewis' Premier pilot; No. 97, Mortimer Reeves' Reo as assistant pilot, and No. 96, the Packard Red Cross, under the official direction of Dr. Hoag.



THREE PEERLESS CARS ENTERED IN THE GLIDDEN

GLIDDEN STATISTICS

1908 — Entries, 60; Glidden, 30; Hower, 14; Glidden certificates, 2; non-contestants, 10; official, 4.

1907 — Entries, 82; Glidden, 47; Hower, 14; non-contestants, 16; starters, 74; finishers, 28.

1906—Entries, 74; starters, 55; non-contestants, 8; finishers, 30.

1905—Starters, 34; finishers, 27; complying with all requirements of rules, 20; winner, Percy P. Pierce, Pierce-Arrow.

1904—Entries, 77; finishers, 66; no prize offered, this being the run from New York to the St. Louis world's fair.

Recapitulating the analysis and relative strength of the 1908 and 1907 Gliddens is as follows:

	1907.	1908.
Glidden trophy	46	30
Hower trophy	13	14
Glidden certificates	4	2
Non-contestants	6	10
Official	5	4
Totals	74	60

Contesting Cars Examined

In one regard the change of heart evidenced on all sides by the management in regard to the carefulness of the tour is well exemplified by the inspection of all cars and extra parts carried by them on all Wednesday morning, July 8, at 9 o'clock. At this hour all of the contesting cars must present themselves at the official parking place, 757 Main street, where they will be taken over by the Ferguson-Reeves combination. After a cursory examination to insure that nothing but stock models are competing, the program will pass on to the checking-in of the regular spare parts, such as valves, valve springs and other extras regularly supplied by manufacturers at listed prices. The committee has ready heavy canvas bags similar to those employed for carrying mail in which these parts will be placed and sealed therein by wire with lead seals, an inventory of the parts therein being retained by the committee. In another canvas bag of more than double the size, but of the same design, will be put in all the extra spare parts that the contestants take along, by extra spare parts being meant those not regularly supplied with the car at the list price. An inventory of these parts will be taken and kept by the committee so a check-up system can be used

PREMIER PILOT CAR ON PENNSYLVANIA ROADS

ROLLING COUNTRY FOUND NEAR MEADVILLE

periodically with the contents of the different bags. In case contestants carry extra large parts like springs or steering knuckle tie rods which cannot be carried in the extra spare part bag a suitable sealing of these in the car will be accomplished. Tools will be left free, to be carried in their regular boxes, and any use whatever may be made of them on the road without penalty providing the car maintains its time schedule. The penalization system deals only with the use of new parts which are carried in the regular or extra bags and the penalty for the use of either is at the rate of 1 point per $1, the parts being listed at their regular factory prices. This rule is the same as a year ago, but will work out much better to the different clubs because all of the teams are constituted of three cars so that the penalty credited to each of the nine clubs will be the same for the same breakage, providing the price of replacement is the same. Last year, owing to the different numbers and the teams, one team of ten cars received but one-tenth point, whereas a similar breakage in another team of three gave that team a penalty of one-third point. Any contestant that has to make use of spare parts not carried from the start of the tour and inventoried with the committee will be disqualified.

Strict Rules Adopted

Before the completion of the tour the observer proposition will prove the crux of the situation, because of the impartial selection of the winning club depends on the veracity and faithful performance of duty of these arbiters of the situation. In order that these thirty observers for the Glidden and fourteen for the Hower may start as well fitted as possible for their duties special cards have been issued on which they will record their daily reports. On the front cover page appears the following instructions to observers:

Observers must report each day 30 minutes before the starting hour.

Attend instruction meeting each evening for assignments on the following day.

Don't leave the car at the end of the day's run until it is turned over to the official in charge.

At the end of each day have your signature and that of the driver of the car affixed.

Should any objection be made by the operator to the record complaint must be made immediately to the chief observer, F. D. Stidham.

The record may be inspected by one other properly authorized representative of the entrant.

The observer shall ride in the seat assigned him by the entrant or driver.

It shall be the duty of each observer under all conditions and without evasion for any reason whatsoever to remain with and report every detail of the performance of the car to which he is assigned.

Only the driver and mechanician can work on the car or tires.

In the event of sickness or an accident to an observer which shall make it an impossibility for him to remain with car or to secure a properly authorized substitute, he shall select one of the passengers of the car as a substitute observer, who shall perform all of the duties pertaining to the position and shall in addition thereto have his record signed by all the occupants of the car during the time he is on duty.

The two inner pages of the observer's card are given over to tabulations showing the record of regular spare parts used, of extra spare parts used, the disposal of old parts, the time spent on tires and the time passing the different checking stations. On the back cover are the following additional instructions to observers:

A note must be made of any replacements on the car.

Records must be kept of the opening of either the regular equipment bag or the extra parts bag, and the part or parts used must be recorded, stating from which bag taken and what became of the part replaced.

Each entrant may carry as many tires as desired.

In recording time used in tire repairs only do so when the engine is running and no other work is being done.

Under no circumstances shall a car enter a night or any other control except under its own power.

Observers must not figure the running time for the operators.

Record must be made at the time that any intermediate checking point is passed where such points are established.

Where towing or assistance from any external source has been received by the car its observer must make a complete and full report, giving time, place, conditions, length of tow and other important details.

Drivers Are Cautioned

But the attention of the committee has not all been bestowed upon the observers and unusual care has been taken to make sure that the drivers and contestants are entirely familiar with the rules which has resulted in the issuing last-minute instructions as follows:

Springs cannot be wrapped after officially parking the car with the committee on the morning of July 8.

Air cannot be taken from tanks in controls.

Solder, acid and soldering iron can be carried as tools.

Detachable tire rings will be regarded as part of tires and may be renewed without penalty.

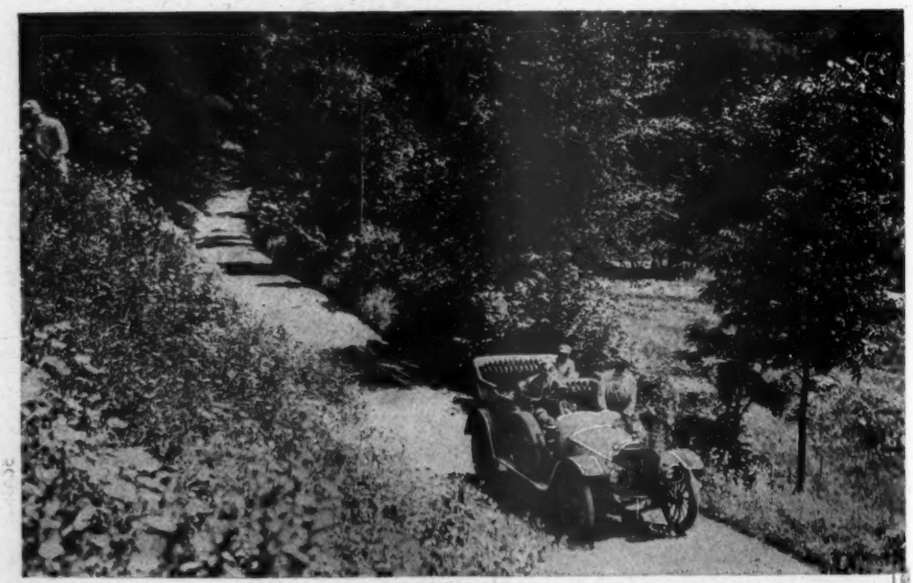
At nights cars will be parked, not garaged, and contestants should carry tarpaulins.

Shock absorbers are permitted and are considered very necessary.

For every passenger fewer than four in a touring car 125 pounds of ballast must be carried. Baggage will not be counted as ballast.

No record of any previous performance or sign, or other indication of the maker's name, other than the name plate on the front of the radiator, shall be displayed on any car at any time during the tour.

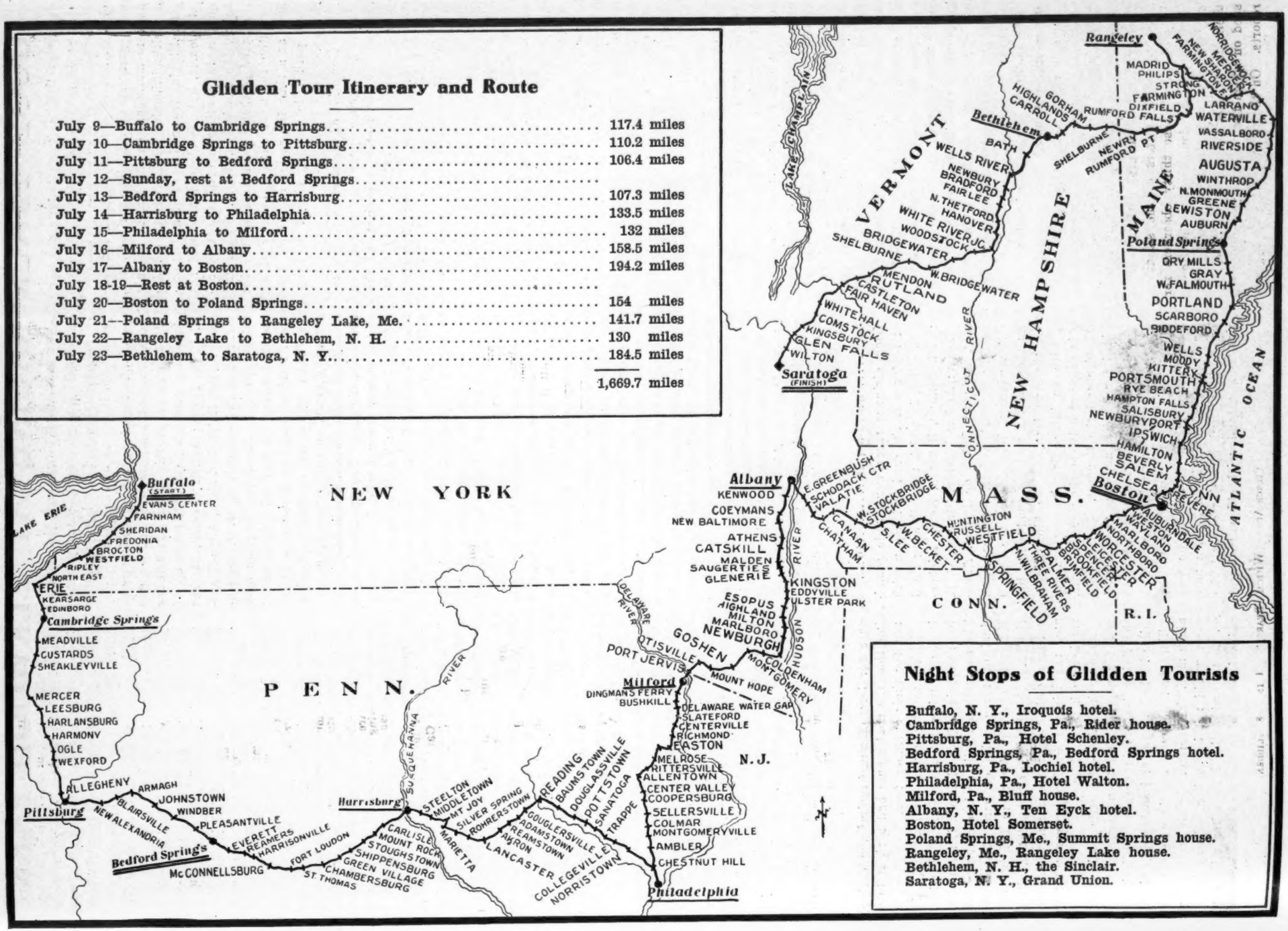
The usual rules applying to evening meetings at headquarters, the issuing of daily bulletins and the carrying of official numbers apply.



PIERCE-ARROW WHICH BEARS NO. 1 IN THE GLIDDEN.

Glidden Tour Itinerary and Route

July 9—Buffalo to Cambridge Springs	117.4 miles
July 10—Cambridge Springs to Pittsburg	110.2 miles
July 11—Pittsburg to Bedford Springs	106.4 miles
July 12—Sunday, rest at Bedford Springs	
July 13—Bedford Springs to Harrisburg	107.3 miles
July 14—Harrisburg to Philadelphia	133.5 miles
July 15—Philadelphia to Milford	132 miles
July 16—Milford to Albany	158.5 miles
July 17—Albany to Boston	194.2 miles
July 18-19—Rest at Boston	
July 20—Boston to Poland Springs	154 miles
July 21—Poland Springs to Rangeley Lake, Me.	141.7 miles
July 22—Rangeley Lake to Bethlehem, N. H.	130 miles
July 23—Bethlehem to Saratoga, N. Y.	184.5 miles
	1,669.7 miles



Night Stops of Glidden Tourists

Buffalo, N. Y., Iroquois hotel.
Cambridge Springs, Pa., Rider house.
Pittsburg, Pa., Hotel Schenley.
Bedford Springs, Pa., Bedford Springs hotel.
Harrisburg, Pa., Lochiel hotel.
Philadelphia, Pa., Hotel Walton.
Milford, Pa., Bluff house.
Albany, N. Y., Ten Eyck hotel.
Boston, Hotel Somerset.
Poland Springs, Me., Summit Springs house.
Rangeley, Me., Rangeley Lake house.
Bethlehem, N. H., the Sinclair.
Saratoga, N. Y., Grand Union.

GOOD TRACK RACING AT ELKWOOD PARK

NEW YORK, July 5—Historic old Monmouth county, New Jersey, famous as the birthplace of Moll Pitcher, of the Revolution, and of Arthur Augustus Zimmerman, greatest of all bicycle riders, too, gave to motordom on the Fourth of July a multi-millionaire meet. Crusty old Jupiter Pluvius frowned upon it and stormed upon it, but his cloudbursts could not quench the enthusiasm of the Guggenheims, the Lewisohns, W. E. Stokes and the other plethoric promoters a little bit nor stop for more than a quarter of an hour at a time the racing at the old Elkwood park mile trotting circuit at Long Branch.

The promotion of the meet was a praiseworthy bit of simon-pure sportsmanship on the part of the motor enthusiasts of the Jersey coast summer colony. They spent money without stint to insure first-class sport. For a fortnight before the Fourth the track was worked and a week ahead was treated with 9,000 barrels of oil to insure against dust. Liberal purses were put up to attract the best cars and drivers in the metropolitan district. The grand stand was elaborately decorated with flags and bunting. The visiting racing men and scribes were brought to Long Branch in special parlor cars, lunched elaborately at Pannaci's and sent away full of choice viands and good cheer after a rousing clambake at Pleasure bay.

As the afternoon wore on and the weather clerk kept the rain in fairly good check, barring several showers not too heavy to scare an enthusiast, the crowd grew in numbers until the seats in the little grand stand at $2 per were all taken, the tiny bleachers were entirely filled and several thousand railbirds lined the fence. On the lawns at either side of the stand close to half a hundred cars were parked at $10 each, scores of motor cars were in the open field near the clubhouse at the head of the stretch, and as many more were drawn up along the fence on the back stretch. Conservatively estimating, there were 300 cars and 5,000 people on hand. With good weather both of these figures would undoubtedly have been doubled. The Jersey coast, be it remarked, is one of the biggest automobiling centers in the country in summer.

Two accidents of the bone-breaking variety marred the meet. Both occurred in the 50-mile race. The first one was when an Autocar, driven by C. E. Fisher, and a Stearns, piloted by Arthur Warren, came into collision in rounding the south turn. The Stearns was overturned, throwing out the crew. Warren had his collar-bone and three ribs broken, and James Crawford, his mechanic, had his leg so badly crushed that it had to be amputated below the knee. A few minutes later M. R. Guggenheim's Renault, driven by Al Bellows, lost a tire and dashed through the fence. Henry Myer, the mechanic, escaped with a broken leg. The pitching of a hospital tent in the infield and the conspicuous presence of an ambulance had not been a useless precaution, it turned out.

A 5-mile race for stripped stock cars or stock chassis for a silver cup and a purse of $50 was the curtain-raiser. It had for starters a promising quintet, made up of Al Poole, Isotta; Arthur Warren, Stearns six-cylinder; Ralph de Palma, Allen-Kingston, and Al Bellows, driving M. R. Guggenheim's Renault. The Allen-Kingston took the lead during the first mile, followed by the American and the Stearns in order. De Palma was never headed. Drawing gradually away, he finally won by a hundred yards from Elliott, who beat Warren the same distance. The fractional times of the winner were: 1 mile, 1:12; 2 miles, 2:16⅘; 3 miles, 3:19⅘; 4 miles, 4:23⅕; 5 miles, 5:25⅘. Elliott, 5:31⅘; Warren, 5:38⅘. The Isotta was practically left at the post, though starting its motor and later lost its right rear tire and was stopped by Dr. J. R. Overpeck, of Philadelphia, the referee.

Then came the 10-mile race for fully equipped touring cars or runabouts manned by simon pure amateurs under A. A. A. rules as follows: W. B. Anderson, 50-horsepower Welch; James Doig, 30-horsepower Stearns; Thomas J. Scully, 30-horsepower Packard, and Stewart Elliott, 50-horsepower American. It was a rattling good race between Elliott and Doig with Scully in warm pursuit and Anderson in fourth place. For 2 miles less than a hundred feet separated the leaders. Then the big powered American drew gradually away and finally won by 300 yards in 10:53, with the Stearns second in 11:07⅘, and the Packard third in 11:42⅘. Elliott's times by miles were:

1	1:16	6	6:35 2-5
2	2:20	7	7:38 2-5
3	3:24	8	8:43 2-5
4	4:27 3-5	9	9:47 2-5
5	5:31 1-5	10	10:53

Long distance races were made prominent features of the card and began with the 50 miles, in which the following lined up: Al. Bellows, Renault; Harry Michener, Lozier; Arthur Warren, Stearns; C. E. Fisher, Autocar; Ralph de Palma, Allen-Kingston; Stewart Elliott, American, and W. B. Anderson, Welch. For the first 9 miles there was a rattling good scrap between the American and the Allen-Kingston, with an interesting see-saw struggle also in progress between the pursuing pair, the Lozier and the Renault. Elliott held the lead for 5 miles and was then passed by de Palma. The American in the tenth mile was stopped by some ignition trouble and lost its place as runner up to the Allen-Kingston, which from here on was never headed, winning in 55:59⅘, a new record for the track by 6⅘ seconds. The Lozier was second with 47 miles, and W. B. Anderson's Welch, which was driven by G. Frewin, third, with 44 miles. The Autocar, Renault and Stearns had been put out of the running by the accidents recited above. The intermediate times were:

Miles	Leader	Time
5	Elliott	5:49
10	De Palma	11:25
15	De Palma	16:47
20	De Palma	22:00 4-5
25	De Palma	27:46
30	De Palma	33:17 1-5
35	De Palma	39:00 2-5
40	De Palma	44:41 1-5
45	De Palma	50:45
50	De Palma	55:59 3-5

Two drivers essayed to beat the mile track record of :53 put up by the late Emanuel Cedrino, in the Fiat, on the occasion of his racing debut in this country in 1903. M. J. Seymour was first away in the Christie, but could no better on such a soft track—there had been more showers—than :57⅕. Ralph de Palma in the Allen-Kingston scored 61⅘ seconds.

A speedy octet of long distance track performers faced the starter for the 100-mile race, which concluded the racing. They were: Al. Poole, 60-horsepower Isotta; Harry Michener, 45-horsepower Lozier; J. Price, 45-horsepower Acme; Stewart Elliott, 50-horsepower American; Ralph de Palma, 40-horsepower Allen-Kingston; Felix Prossen, 40-horsepower Bianchi; Ed. Von Kathergill, 50-horsepower Pope Toledo, and I. M. Appercu, 20-24-horsepower Cadillac. The struggle that ensued was a hard fought battle with varying leadership that kept the interest and enthusiasm of the spectators keyed up from start to finish. It was, besides, a game all around exhibition of perseverance and pluck on the part of the drivers, for before the race was one-third over the rain began to fall and made a skating rink of the course. The cars skidded badly at the turns and often swayed from side to side in the stretches. In fact, the going was so bad that there were calls to the referee to declare the race off. Dr. Overpeck, however, refused, pronouncing the course safe for long distance racing and declaring that the contestants had a right to a run for their entrance fees.

Elliott went away in the lead and held it for 10 miles, when de Palma, who had been pursuing him hotly, took it from him. The contest soon split up into a triangular duel of three pairs of cars, the Allen-Kingston and the American fighting for the lead, the Lozier and the Isotta alternating ahead of one another, and the Acme and the Bianchi having a merry scrap further back in the line.

Around the thirty-fifth mile Poole stopped for goggles and then began chasing the flying leaders in earnest. Within 5 miles he had caught and passed de Palma. Elliott had dropped out in the twenty-ninth mile. The former bicycle racer, however, would not be shaken off and hung on tooth and nail. Mile after mile the pair wig-wagged in the mud by the cheering stand. Closer and closer the Yankee car crept up on the Italian machine and

finally got by it in the eighth mile. Then Poole woke up and cut loose with the Isotta and caught and passed the Allen-Kingston. Both took desperate chances in the mud. But the Savannah and Briarcliff winning brand was too fleet for the Allen-Kingston, well and courageously as it was driven, and drawing gradually away finally won by the length of the stretch in 2 hours 10 minutes 36⅘ seconds. The Allen-Kingston was beaten by but 12 seconds. The Lozier was third with 93 miles, the Bianchi fourth with 88 miles, the Acme fifth with 82 miles, the comparatively lower powered Cadillac sixth with 77 miles, and the Pope-Toledo seventh with 70 miles.

The score of the race was:

Miles	Leader	Time
10	Elliott	10:34 2-5
20	De Palma	23:11 2-5
30	De Palma	36:03
40	Poole	50:06
50	Poole	65:54 3-5
60	Poole	79:54
70	Poole	93:07 2-5
80	De Palma	106:03
90	Poole	118:20 2-5
100	Poole	130:26 4-5

DROP IN MAY EXPORTS

Washington, D. C., July 4—The latest returns of the government's statistical bureau show that there was a big drop in the exports of motor cars in May last as compared with May a year ago, the number of cars exported dropping from 281, valued at $618,018, in May, 1907, to 229 cars, valued at $389,487, in May last. On the other hand, the exports of parts increased from $47,432 to $69,570 during these periods. There was also a falling off in the exports of cars during the 11 months ending May, the returns showing that 2,206 cars, valued at $4,008,724, were exported during this period of 1908, as against 2,567 cars, valued at $4,221,316, exported during the 11 months of 1907. Exports of parts increased from $548,871 during the 11 months' period of 1907 to $558,401 during the corresponding period of 1908. During May last cars and parts were shipped to the following countries: United Kingdom, $132,663; France, $100,597; Germany, $21,785; Italy, $6,300; other Europe, $16,381; British North America, $94,066; West Indies and Bermuda, $6,887; Mexico, $39,908; South America, $21,534; British East Indies, $1,611; British Australasia, $5,938; other Asia and Oceanica, $10,598; Africa, $127; other countries, $662. The dutiable imports of motor cars during May last number seventy-two, valued at $170,185, as against 105 cars, valued at $333,657, imported in May a year ago. During the 11 months' period the number of cars imported declined from 1,113, valued at $3,839,045, in 1907, to 974, valued at $2,346,613, in 1908. Imports of parts declined in value from $75,768 in May, 1907, to $42,515 in May last, and from $717,234 to $428,978 during the 11 months' period. During May last cars were received from the following countries: United Kingdom, two, valued at $3,407; France, fifty-two, valued at $122,952; Germany, two, valued at $6.571; Italy, fifteen, valued at $34,939.

SHUT DOORS ON A. A. A.

Allied European Clubs Recognize New Yorkers and Will Not Admit National Body

New York, July 7—Special telegram—According to daily press cables, the allied European clubs, which met at Dieppe on Monday, denied the national body of the United States admission and a personal hearing and voted to recognize the Automobile Club of America as their sole representative in this country. William K. Vanderbilt, Jr., and A. G. Batchelder, the accredited representatives of the American Automobile Association, were not allowed to be present. Count Sierstopff, president of the German Automobile Club, is reported to have made a statement in their behalf, setting forth as best he could from hearsay the conditions existing in this country. There was no opportunity afforded Mr. Vanderbilt and Mr. Batchelder to reply to any statements Dave Hennen Morris, George Heath and W. S. Hogan, the delegates of the New York club, might make. Count Sierstopff is said to have pointed out that the A. A. A. was the larger and more powerful organization and that the Vanderbilt commission never had been notified of any agreement made by its correspondents in the matter of the Ostend rules. As a matter of fact, the New York club's foreign representatives, then acting as A. A. A. correspondents, never attended the Ostend meeting and so could not have bound the A. A. A. to the reversed rules had they had any such authority. The shutting out of the A. A. A. delegates and the refusal to grant the national body in the United States a hearing was the outcome of a protest filed by the national clubs of Great Britain and Germany prior to the meeting.

The cables say the discussion was a warm one and resulted in the recognition of the New York club as the only organization in this country that could hold membership in the National Association of Recognized Automobile Clubs. The position taken was that only one organization could be recognized in any one country and that the choice should fall on the one that had incorporated the Ostend conditions in its rules. A clever grand stand play was made by the New York club in Judge Gary securing from President Roosevelt, our nation's good-natured chief, a message of good will for transmission to Baron Zuilen von Neyvelt, the president of the association. The color this message lent to the pretentions of the New York club to being a national body can well be imagined. The outcome will draw the line between the A. A. A.'s contests and the New York club's races still more sharply. The Vanderbilt will have its Americanism intensified and the Savannah race will be more than ever emphasized as a special event kindly promoted in this country for European cars under European rules by their very good friends of the New York club.

This action on the part of the powers that be on the other side of the Atlantic has not been thoroughly discussed here, for the reason that most of the A. A. A. leaders are either abroad or have gone to Buffalo for the good roads convention and the Glidden tour. The announcement has not caused any change in plans on the part of the A. A. A.

CENTURY CAR IN GLIDDEN

Indianapolis, Ind., July 7—With almost half of the requisite mileage reeled off, the Premier hundred century car left Indianapolis on the morning of July 5 for Buffalo by way of Richmond, Ind.; Springfield, Cleveland and Erie, covering the distance by easy stages, allowing 3 days. While it has been the purpose of the Premier company to keep the daily mileage down to aproximately 100 miles, the object being to show that 100 miles was a conservative requirement of a motor car and not the maximum possibility, yet the company has decided to lay out a plan of operation which will necessarily increase the daily mileage, though the century car must go 100 days, regardless of the number of miles traveled in excess of 100 miles a day, or a total of 10,000 miles. According to present plans the car will accompany the Glidden tour in the capacity of press car.

TWO SHOWS FOR PARIS

Paris, June 25—After the lavish pyrotechnic display of the tenth annual salon, Paris is to have an economical era, the first signs of which are to be found in the decision taken this week by the organizing committee to abandon the huge temporary hall on the Esplanade des Invalides. This year there will be two Paris salons, the first one opening on Saturday, November 28, and closing on Sunday evening, December 13, and the second one keeping open its doors from December 22 to December 29. Both exhibitions will be held in the grand palais on the Champs Elysees, the initial event being for all kinds of pleasure vehicles, accessories, motor cycles and bicycles. The second show will comprize all classes of commercial motor cars, machine tools, etc.

SETS BELGIUM SHOW DATES

Brussels, June 25—At a recent meeting of the Belgian Automobile Board of Trade radical changes were adopted in connection with the holding of the annual show in the capital. The 1909 salon will open January 16 and close on the 25th of the same month. The doors of the hall of the magnificent show building at the Parc du Cinquantenaire will be open from 10 a. m. till 4 p. m. The decoration and arrangements of the stands will be uniform and all the exhibitor will have to do in connection with his space will be to fill it with his goods, the show committee taking care of everything else.

GOOD ROADS THE CRY OF MANY AT BUFFALO

BUFFALO, N. Y., July 7—With the thermometer at nearly 90 in the shade the national good roads and legislative convention of the American Automobile Association opened in this city today. Concert hall, where the delegates met, was tastefully decorated with the national colors. Promptly at 10 o'clock this morning President William Horace Hotchkiss, of the American Automobile Association, opened the meeting by reading the following extract from an address of President Roosevelt, delivered at the international good roads congress in 1903:

When we wish to use descriptive terms fit to characterize great empires and the men who made these empires great, invariably one of the terms used is to signify that that empire built good roads. When we speak of Romans we speak of them as rulers, as conquerors, as administrators, as road-builders. There were empires that rose over night and fell over night, empires whose influence was absolutely evanescent, which have passed away without leaving a trace of their former existence; but, wherever the Roman established his rule, the traces of that rule remain deep today, stamped on the language and customs of the people, or stamped in tangible form upon the soil itself. And so, passing through Britain 15 centuries and over, after the dominion of Rome passed away, the Roman roads as features still remain; going through Italy, where power after power has risen, and flourished, and vanished since the day when temporal dominion of the Roman emperors transferred its seat from Rome to Byzantium, and all the people of the middle ages that have ruled that country—it is the imperishable Roman roads that reappears.

The faculty, the art, the habit of road building marks in a nation those solid, stable qualities which tell for permanent greatness. Merely from these standpoints of historic analogy we should have a right to ask that this people which has tamed a continent, which has built up a country with a continent for its base, which boasts itself, with truth, as the mightiest republic that the world has ever seen, which I firmly believe will, in the century now opening, rise to a position of headship and leadership such as no other nation has yet attained, merely from historic

JAMES H. MACDONALD,
PRESIDENT ROAD MAKERS' ASSOCIATION

analogy, I say, we should have a right to demand that such a nation build good roads. Much more have we the right to demand it from the practical standpoint. The great difference between the semi-barbarism of the middle ages and the civilization which succeeded was the difference between poor and good means of communication. And we, to whom space is less of an obstacle than ever it was in the history of any other nation, we who have spanned a continent, who have thrust our border westward in the course of a century and a quarter until it has gone from the Atlantic to the Alleghenies, from the Alleghenies down into the valley of the Mississippi, across the great plains, over the Rockies to where the Golden Gate lets through the long heaving waters of the Pacific, and, finally, to Alaska, to the Artic regions, to the tropic islands of the sea, we who take so little account of mere space must see to it that the best means of nullifying the existence of space are at our command.

W. H. HOTCHKISS,
PRESIDENT AMERICAN AUTOMOBILE ASSOCIATION

Mayor James N. Adam, of Buffalo, welcomed the visiting delegates in a neat speech on the main question—good roads.

Congressman Cocks Talks

In introducing the next speaker, William W. Cocks, congressman from New York and introducer of the pending federal bill, the chairman paid a fitting tribute to the rare qualities of Mr. Cocks, whose subject was "Federal Automobile Legislation." Mr. Cocks said in part:

I lived in Connecticut, one of the first states to be inflicted by a motor registration law. The first bill provided a speed limit and a fine for its violation. Gentlemen, if these bills were just they were the best disguised pieces of legislation I ever saw. The men who drew them did not have as many manners as a Long Island farmer. They allowed the motor car to have the right of way over the loaded vehicle. We were pretty much aroused over the way in which motorists used the highways. People were afraid to drive along the road, horses went into the ditch at the sight of the fast-speeding machines. Probably all the people know about it and it was a fact that we were justly aroused. But fortunately sane and reasonable motorists cooperated with us in passing a law which rendered the lives of pedestrians safe.

Right here I want to mention an incident which occurred in our state. A motorist ran over a man because he claimed he couldn't stop his machine in time to avoid the accident, yet the very next day the same man brought his machine to a stop in about 2 seconds in order to light a cigarette. The solution of the antagonism between the motorist and the pedestrian is a federal law. This thing called "prejudice" can be removed from the minds of those who do not drive motor cars. The federal bill has lots of friends. If the constitutional objection can be overcome it will be a remarkable bill. Charles Thaddeus Terry, chairman of the A. A. A. legislative board, presented the case before the judiciary committee of the house. The committee was not necessarily hostile to the bill, but the state rights question troubled them. The American Automobile Association did valuable work toward helping along the passage of the bill.

I am not a motorist and may never ride in a motor car, but I can see no reason why a motor car should register in each state through which it passes. But the main question in regard to this legislation is what can we do toward promoting it. Perhaps it would be well to get the views of some sharp constitutional lawyers. But I must say despite the difficulties which are involved in this great work the outlook for its passage is very favorable. Several members on the committee are favorable. Now the thing to do is to get the opinion of your representative, who is probably a lawyer and understands the constitutional questions involved. My own simple-minded view is that it is constitutional.

Charles Thaddeus Terry, of New York, chairman of the A. A. A. legislative board, was the next speaker. He said in part:

Our heartiest congratulations are due to the officers of the American Automobile Association, to its committees in charge of the convention and to the individual members of the organization upon the wisdom and foresight which conceived and the intelligent industry and untiring zeal which have brought to so successful a consummation the ideas embodied in this national convention. This is an epoch-making occasion. It is the most signal and significant event which has happened in the history of motoring in this country. Its influence has already been widely felt, and will be still more widely felt to the lasting advantage of the industry and the sport in the days to come. The deepest gratitude should be entertained by the users of motor vehicles in every state in this country to the American Automobile Association, which has made such a convention as this possible and successful, and most of all is gratitude due, for his indomitable energy and unremitting labor, to that man who spent his days and nights, in season and out of season, for the upbuilding of this great organization, in self-denying devotion to the interests of motorists,—our president, William H. Hotchkiss.

The condition in which we find the motor-vehicle laws of the various states of the nation at this time is both intolerable and ridiculous. Intolerable, because it retards the progress and development of the motor car and greatly lessens its usefulness. Ridiculous, because it is hard to conceive how, within the confines of one nation, so many legislative bodies, supposedly made up of the leading men of the commonwealths, could enact provisions of law on the same subject so divergent and contradictory, and at the same time absolutely without apparent purpose, except to harass and restrict a certain class of citizens.

N. J. BACHELDER,
MASTER OF NATIONAL GRANGE

The present motor vehicle laws are the last, best demonstration of the provincialism of several of our states. They are the masterpieces of men of so narrow an outlook that they cannot see that any one lives behind the mountains which confine their hamlet, their county or their own commonwealth. Those legislatures which enact motor vehicle laws destructive of the rights of the residents of other states to engage in interstate travel hide behind the high-sounding phrase, "state's rights," which it will be observed is utterly meaningless in this connection. Such laws spring not at all from an observation of state's rights, but entirely from a narrow provincialism which refuses to consider the rights of the citizens of sister states.

And let us not be deceived by the cry of these legislators that the hostile motor legislation which they enact is demanded by that much-abused class called "farmers." There is not a word of truth in it. No one, who has given thought to the situation nor had experience at legislative hearings dealing with proposed motor legislation, has found the "farmer" anything but open-minded, reasonable, fair and ready to be instructed as to the facts and persuaded as to the natural conclusions to be drawn from them. No, the trouble lies not with the farmers. It lies rather with the cheap politician, the demagogue, who is ever ready to make capital out of the nearest available material, and who, whether he asserts it in so many words or not, acts upon the assumption that he is the common people, the sovereign "who controls the roads, the deputies and the future of political parties." He, it is, and not the farmer, who instigates the enactment of those stupid, senseless laws. Of course, one does find from time to time in every community, whether it is the city or the country, individuals who, because of some real or fancied indignity at the hands of a motorist, are ready to curse progress and science and everything and everybody, and to rush to his senator or assemblyman and demand that the motor car be driven from the highways. But such incidents have become, in this day, not the rule but the exception. Whatever may have been true in former days, it is no longer true that bad motor laws come by any popular demand. They are born of the imaginings of some one or more legislators often for a political purpose.

The federal registration bill, drafted and presented to congress by this association, will become the law of the land. There is not the slightest question of it. It is recognized to be right and expedient by everybody, and no one, who has given the subject adequate study and whose mind works clearly, denies the constitutionality of the measure. If a man may walk or drive, or sail in his steam yacht, through various states without being retarded and restricted at the boundary line of each state by registration and license laws, why may he not likewise travel through the various states in a motor vehicle? If it be said in answer that the residents of the state require his identification for their own safety, the answer is that the registration of the motor vehicle under this federal law will suffice, as it has always done in the case of steam and sailing vessels while using the waterways of the nation. Under this bill, the only restrictions upon the various states is that they shall not retard and impede motor vehicles engaged in interstate travel by useless and unnecessary registration and license requirements.

To enact laws which impair or destroy the rights of the many, in order to reach and punish the few, is distinctly un-American. It is directly contrary to the basic principle of our jurisprudence, which holds that it is better that a thousand guilty persons should escape than that one innocent should suffer. Such states as the state of New Jersey have reversed this doctrine and have framed their law upon the dogma that, better a thousand innocent persons should suffer than that one guilty should escape. The bare statement of this policy, which has been adopted in that state, carries its own sufficient condemnation.

Gentlemen, the worst of the battle is over. The common-sense of our people is again asserting itself, even to the confusion of some legislators who do not wish to be convinced. The uniform state motor vehicle is on the way and at no very distant date will be an accomplished fact. The federal automobile registration law, when it has been set upon the statute books, as it inevitably will be, will prove to motorists the boon which it was intended to be, and will answer the criticisms of the last doubting obstructionist. In short, a better, brighter day is dawning in motor car legislation in all the world—and New Jersey.

As members of the great fraternity of motorists, we are all interested in legislation affecting this great invention. Hundreds of millions of dollars are invested in motor cars and in their manufacture. In a business way and as a source of pleasure and recreation it is not too much to say that the motor car is fast becoming one of the greatest institutions in the world. It has for its devotees men in every rank, profession and walk of life. The influence of this body of men cannot be overestimated. And in my judgment this great force will grow stronger and stronger so that its growth will in a short time exceed the expectations of the most sanguine.

The motor car as a vehicle for the transmission of business and the conveyance of freight and passengers is yet in its infancy. As a means of recreation it has no equal. It furnishes no field for the activities of the drunkard or the cad. It promotes loyalty, good fellowship, skill, mental and physical vigor. In annihilating distance it is the equal of the railroad. It brings into close communion all the remote places.

The motor car should be entitled to equality before the law with all other vehicles and means of transportation. Yet we find a disposition on the part of various states to outlaw it by unwarranted restrictions and burdens. It is subject, I believe, in nearly all the states, to license fees. In fact I understand that in one state it is practically impossible for a non-resident motorist to bring his car within the boundaries of the state. I look upon these burdens of special license fees and taxes as medieval. They rank in oppression with the octeri taxes of continental Europe, which burden at every boundary the market woman with her eggs, the peasant with his produce, and the merchant with his wares, to say nothing of those other restrictions on trade and commerce nearer at hand which I will not more particularly describe because of my political faith.

My position is that while each state may as to its own residents impose taxes or license fees upon motor cars owned by them, it cannot legally impose such license fees or taxes upon non-resident automobilists who bring their motor cars temporarily within the state for business or pleasure. If this tax can be sustained then a tax upon any non-resident traveling within a state could be as legally imposed. The driver of a wagon, a bicycle, or a boat upon a stream, would offer as logical a subject for state license and tax as a non-resident motorist. The same might be said of a foot passenger or of a man on horseback. License fees and taxes of this description have received the condemnation of our highest judicial tribunals.

In Crandall vs. Nevada, 73 U. S. 35, the court had under consideration a law of the state of Nevada which imposed a capitation tax upon any person leaving the state upon any railroad or stage coach. This tax was to be paid by the officers and agents of the transportation company. I quote from the syllabus of this opinion: "The right of passing through a state by a citizen of the United States is one guaranteed to him by the constitution and must be sacred from state taxation. All the citizens of the United States as members of the same community must have the right to pass and re-pass through every

STATE ENGINEERS ATTENDING GOOD ROADS CONVENTION

From left to right—H. K. Bishop, macadam expert, Albany; H. B. Brewster, division engineer, Syracuse; L. B. Harrison, division engineer, Albany; F. L. Gettman, deputy state engineer, Albany; Stephen Ryan, state road commissioner; George Dehl, resident engineer, Erie county; Spencer Stewart, resident engineer, Jefferson county; Fred Strong, resident engineer, Broome county.

Neal Brown, president of the Wisconsin State Automobile Association, next spoke on the "Constitutionality of Federal Automobile Registration." He said in part, in his lengthy speech:

I might offer more than the conventional apologies for the address I shall make you because it has not seemed possible that I could add anything to your sum of knowledge respecting motor cars or motor legislation. Had it not been for the kindly and urgent invitation to come here and the lure of so much good fellowship that was in prospect, I should have taken to my trout stream and addressed my pointed remarks to the inhabitants therein, instead of to you.

I had the pleasure of being in Washington last winter and of meeting your counsel, Mr. Terry, and of laboring with him to relieve the constitutional doubts of various constitutionalists who opposed federal legislation on the motor car question. Our labors, not Herculean on my part, were in vain. The constitution still stands, although I must say that I have sometimes thought it was badly shattered. Historically the constitution has been made to serve many purposes and has afforded warrant for many policies not within the meaning of those who prepared it. According to tradition one loose constructionist has tossed it lightly aside with the remark, "What is the constitution between friends." And another of ruder mould petulantly dismissed it, when it collided with his wishes, with the profaner objurgation, "To h—l with the constitution." Never having had occasion to break it or violate it in any official capacity, I have regarded it with considerable reverence as a check upon the otherwise unbridled license of legislative and executive power.

MOTOR LEADERS WHO WERE AT THE CONVENTION

From left to right, first row—James T. Drought, secretary Wisconsin State Automobile Association, Milwaukee; President Brown, of Vermont Automobile Association; F. A. Westmyer, West Virginia Automobile Club, Wheeling; Neal Brown, president Wisconsin State Automobile Association; Charles Thaddeus Terry, chairman legislative board A. A. A., New York; William H. Hotchkiss, president A. A. A., Buffalo; Hon. W. W. Cocks, congressman from New York; George B. Ellis, representing Automobile Club of Southern California, Los Angeles. Second row—President Coffin, Worcester Automobile Club, Massachusetts; Senator Godcharles, of Milton, Pa.; Roy E. Britton, secretary Automobile Club of St. Louis, St. Louis, Mo.; Walter S. Schutz, counsel Connecticut State Automobile Association, Hartford. Back row—Secretary Davis, of Philadelphia Automobile Club, Philadelphia; Frank G. Webb, Long Island Automobile Club, New York; Russell A. Fields, Long Island Automobile Club, New York; Colonel W. D. Wilson, Automobile Association of Vermont.

part of it without interruption as freely as in their own states. Such a tax imposed by a state is inconsistent with the rights which belong to citizens of other states as members of the Union."

The court in the course of its reasoning said: "So in the case before us it may be said that a tax of $1 for passing through the state of Nevada by a stage coach or by railroad cannot sensibly affect any function of the government or deprive a citizen of any valuable right. But if the state can tax a railroad passenger $1 it can tax him $1,000. If one state can do this so can every other state. And thus one or more states covering the only practicable routes of travel from the east to the west, or from the north to the south, may totally prevent or seriously burden all transportation of passengers from one part of the country to the other."

Summing up all the authorities one must reach the following conclusions as to motor legislation:

First—A state may impose taxes and license fees with respect to motor cars owned or controlled by residents of such state or as to motor cars that are not in transit through or into the state.

Second—Like burdens may be imposed upon motor cars owned by non-residents of a state, that are within the state and not in transit but which have by reason of circumstances a permanent situs within the state.

Third—This does not extend, however, to motor cars in transit from, through or into a state even though such transit may be delayed from necessity or at the pleasure of the owner in traveling within the state.

Fourth—In the absence of federal legislation the states may establish reasonable police regulations relating to the operation of motor cars engaged in interstate travel, such as fixing speed limits and matters of this kind.

Fifth—It is desirable to have a federal law providing for registration and numbering of motor cars in order that those which may be used from time to time in interstate travel should be capable of identification and their status be thus publicly determined and recorded.

Sixth—This federal legislation ought not to enter into the field of mere police regulation. Such regulation can be safely left to each state, as they would necessarily, under various constitutional limitations, be impartial and non-discriminative as between domestic and foreign motor cars.

Seventh—Such federal legislation would not prevent the state from licensing and taxing domestic motor cars under the limitations herein suggested.

Eighth—It is not necessary to determine whether this entire subject of regulation of interstate motor travel lies outside of state jurisdiction. The fact that as matters now are the states can establish any number of diverse burdensome exactions is enough to call for federal legislation in order that the main part of this regulation can be accomplished through a harmonious federal law.

Ninth—If not already commenced, a test case should be provided for in order that this question may be finally settled by our highest judicial tribunal, the expense of such test case to be borne by some one or more of the various motoring associations.

Permit me to say in closing that I have not tried to cite all the authorities nor, despite a considerable trespass on brevity, have I argued at length this important question. I somewhat hastily sought to present principles which can be easily understood by both lawyer and layman. It is intolerable that motorists should be subjected to the exactions of state legislation, at least until the power to enact such legislation has been finally judicially determined. We ought to have the right to travel freely and without yielding up toll or tribute across the boundary line of every state in this union. Our rights in this respect are as sacred as those of all other travelers. And whether these rights be placed upon the proposition that such travel is interstate commerce or upon the ground of the fundamental liberty of the citizen to go freely and without restraint through every part of our country is not important. I hope the time has not yet come when as a part of settled policy state constabulary can meet peaceful travelers at state boundary lines and levy tribute upon them for the privilege of crossing such boundaries. It is true that in many of the states this tribute is small. So was the ship money of the king which the patriot Hampden refused to pay. So were the taxes levied upon these colonies which lead to the great revolution. It is not the amount of the tax but its injustice that should move us to a sturdy resistance. I am only giving you my opinion and the reasons for it. To know what the ultimate decision will be is not within mortal ken. I cannot prophesy clearly upon this, nor do I wish to indulge in the boasts of him who taketh off his armor.

In parting from you allow me to wish you all the pleasure of the perfect car, a fat spark, a free highway, a bumpless passage and the rigor and pleasure of the game.

Remarks by a Boston Man

Francis Hurtubis, Jr., counsel for the Automobile Owners' Association of Boston, said with regard to the passage of the motor car law:

Mr. Chairman, I believe this is the proper place to butt in. I am heartily in favor of the passage of a federal law. I am more anxious because of a case which has arisen in Massachusetts making such a law very important at this time. Recently a member of the American Automobile Co., of Providence, came to Norwood and was arrested because he did not have his license. He engaged me as his counsel. The law provides that any non-resident might operate for 9 days without a license. I contended in the courts that inasmuch as a corporation couldn't use property except by an agent or servant and was not subject to such a tax that my client had not violated any law because he was the agent of the owner of the American Automobile Co. Yet the court held that the law had been violated.

It is established by decisions that congress may regulate interstate commerce. Now commerce means traffic. It means intercourse, it means ingress or egress. When a motor car is going from one state to another it is engaged in interstate commerce, which is a point practically decided by numerous decisions of the supreme court.

J. F. Beam, of Welland, Ont., who has made a special study of this question, raised some points not touched on by the other speakers. He said he spoke from the farmers' standpoint.

"Is it not justice," said Mr. Beam, "that the flyer-like motor car should be restricted? Suppose some person drives on the sidewalk, wouldn't he be arrested? There is certainly justice in limiting the speed. The motor car is destined to be used by farmers as much as city folk. But 40 or 60 miles an hour is not the proper way to run it.

"This is a grand convention to solve this question. A good roads convention should solve the tax problem. Now is the time to talk the matter over. Motorists create dust, injure gardens and commit other damage. Why shouldn't they pay their share in maintaining the roads? The question of cost is important. In Ontario we are behind the times compared with the leading states. It should be arranged so that the motor car owners should pay at least one-half the expense."

At this point Mr. Terry arose to correct what he thought was a wrong impression in the mind of the last speaker. "The proposition isn't that all speed limits should be taken off," he said. "The point is, we should have limits which are appropriate to the different circumstances. The test of speed limit should be what is reasonable and proper; length of highway, condition of roads, etc. Negligence should never be the test of proper speed."

Hooper's Opening Address

At the afternoon session today Chairman Robert Hooper's opening address was read by President Hotchkiss in the absence of Mr. Hooper, who is chairman of the A. A. A. good roads board:

In opening this first national good roads convention, at which these three great national bodies, the American Automobile Association, the American Road Makers' Association and the National Grange, are coöperating, it is not my intention to make a long speech, as we have much to come hereafter that will be more interesting to you. We have called this convention to order for several purposes; the first, and most important, is to secure uniform action on the part of all bodies now working for the good cause. We do not mean necessarily that there should be one great association, but that there should undoubtedly be a great central committee which will in a way have some jurisdiction over the field in which the great national bodies are working. You all appreciate the fact that it is impossible for such a great movement as we now have before us to be carried on successfully unless there are at least three great factors working along the same line; first, there must be an organizing body; second, there must be an association of practical men to take charge of the work as it is presented to them; third, there must be that great body of American citizens to aid us, they who use the roads, and without whose help we could not build them—the farmer. Heretofore every action on the part of the American Automobile Association towards the good roads movement has been somewhat misconstrued, but I say to you, gentlemen, as you all well know, the motor car has come to stay. You must therefore appreciate the fact that we are working, not for selfish motives, but entirely in an effort

to help along the public cause in the same manner as all associations are working.

Our association is willing to give up its time and throw its entire energies toward building up and helping along organized work. It is, however, impossible for us, owing to the absolute lack of practical knowledge, to take any other step. On the other hand, the American Road Makers' Association, including as it does many best known engineers in the country, is better able to do the actual work of construction than any other known body. In the early days of motoring, owing to the thoughtlessness and at other times criminal disregard of the rights of others, the rural population, to a man, became antagonistic at even the mention of the word motor car. It has taken us a long time to overcome this feeling, and convince the farmer, that we do not stand for any one driving a motor car unless he in turn even more than recognizes the rights of others. I believe, however, you will all feel, as we do, that in securing the coöperation of the National Grange, we have removed the last barrier to the active cooperation of these three great bodies in a cause in which each is vitally interested. The association so formed will give to this great country a system of roads greater than any in the whole world.

Charles J. Glidden, of Boston, was the next speaker this afternoon. He spoke on "The Roads of the World." He said:

During the past 7 years I have driven the motor car 46,528 miles in 39 countries, passing through over 14,000 cities, towns and settlements, twice encircling the globe, reaching the most northerly point by crossing the Arctic circle in Sweden and the most southerly on Ward's Parade in New Zeland. For the purpose of comparison I will classify the roads as follows: Excellent, good, fair, bad and wretched. In placing the countries in their proper place I take into consideration the roads as a whole, that is, the condition of the entire roads: Boston to Minneapolis or St. Louis. In England, Land's End to John O'Groats in Scotland. Monte Carlo to Paris. Naples to the French frontier. South of Sweden to the Arctic circle. North of Denmark to Berlin. Vienna to Paris. Bombay to the frontier of Afghanistan, and from that point to Calcutta, 1,700 miles. Melbourne to Sydney in Australia, and nearly all the main roads of Ceylon, Japan, Syria, Egypt, Greece and Tasmania.

In many countries good and excellent roads are maintained to a distance of 50 or 100 miles from the principal cities, Burmah as an illustration, but the motor car must be shipped on the train 350 miles from Rangoon to Mandalay. Under the head of excellent roads I will place Cochin China, England, India, Java, Malay States, Scotland, Wales and France, although one-third of the route we recently covered from Nice to Paris can only be considered fair. In the class of good roads I place Austria, Bavaria, Belgium, Bohemia, Ceylon, Denmark, Germany, Hawaii, Holland, Hongkong, Italy, Switzerland and Tasmania. The roads in Tasmania were built by convicts many years ago and are well preserved. We found the roads in a fair condition in the Fiji Islands, Greece, Ireland, Japan, New Zealand and Sweden. Bad roads are in Burmah, Egypt and Spain, wretched roads in Annam, China and Mexico. In a class by themselves about equally divided between good, bad and wretched I put Australia, Syria, and I regret to say, the United States.

The grand trunk road of India, extending from the frontier of Afghanistan to Calcutta with a spur from Aligarh to Bombay, in all 2,300 miles, is an excellent thoroughfare; broad and nearly level the entire distance; fringed, however, with the Himalayas for 1,000 miles, although the mountains are 50 miles away, they appear near at hand, and the cold blasts from their snow-capped summits are keenly felt at all times of the year. All the roads of Ceylon are well graded.

Among the other speakers at the first day of the convention was James H. McDonald, state highway commissioner of Connecticut and president of the American Road Makers' Association. Mr. McDonald said in part: "What this country wants is practical road builders who can take a dollar and make it go as far as possible. We should spend our money intelligently. East of the Mississippi the question is, How shall we protect the roads that we have built? West of the Mississippi the question is, How shall we build such roads? The United States congress and senate should establish a system of national highways. These highways should be under the supervision of United States engineers.

"Every state should build a system of state highways without the contributions of the little towns. Our roads are not a local matter. They belong to the public and should be built and maintained by state money. A road commissioner who is spending the people's money should spend that money righteously."

Mr. McDonald then exhibited a chart showing a number of samples of mistakes often made in road building. He also gave some practical information about the proper methods to be followed in highway construction.

Another feature of the first day of the convention was the reading of a paper prepared by Frederick Skene, state engineer and surveyor of New York state. He said in part: "The first appropriation made by New York state to carry out the Higbie-Armstrong act was $50,000 in 1898 and this amount was increased from year to year until 1904, when the appropriation by the state had increased to $1,000,000 per annum. The average cost per mile of roads built in New York state from 1898 until 1903 was about $7,000 a mile. Since then, owing to increased width and in some instances increased depth of the road and also to the fact that prices of labor and material have advanced considerably, the cost has been increased to an average of about $9,000 per mile. A radical change in the manner in which the work of highway improvement is to be conducted will become effective January 1, 1909, when three commissioners, to be appointed by the government, will have entire charge of highway improvement throughout the state. Our department in preparing plans for roads makes every effort to provide for proper drainage and to secure the best alignment and grade."

Horatio S. Earle, state highway commissioner of Michigan, gave some valuable information on the subject of "Drainage and Sub-Base of Improved Roads." In the course of his remarks he said the state convicts should be employed to crush rock, prepare tile and perform other work in connection with the improvement of the public highways.

"Unreasonable State Legislation" was discussed by W. C. Crosby, chairman of the legislative committee of the Associated Automobile Clubs of New Jersey. He advocated uniform motor car legislation, and emphatically stated that the motorist must learn the rights of others before he receives fair treatment.

"Uniform State Motor Car Legislation" was discussed by Walter S. Schutz, counsel of the Connecticut Automobile Association and the Hartford Automobile Club. He said in part: "In recent years the motor car laws have shown a tendency toward uniformity. The motor vehicle has gradually broken down the barriers between states. There are more motor car accidents as the result of the recklessness of experts than from the ignorance of novices. If the state and local clubs work in favor of the enactment of a uniform motor car law, then the barriers between the states will go down. The statute in this respect should be so simple that a Philadelphia lawyer would not be required to interpret it."

Discussions were held at various times during the convention. Among those who took part were: J. H. Wood, former president of the New Jersey Motor Club; W. S. Gilbert, of the Cleveland Automobile Club, and George B. Ellis, of the Automobile Club of Southern California.

GOOD ROADS ENTHUSIASTS WHO WERE AMONG THE SPEAKERS

From left to right—Neal Brown, president Wisconsin State Automobile Association; W. C. Crosby, chairman legislative committee Associated Club of New Jersey, Newark, N. J.; James T. Drought, secretary Milwaukee Automobile Club, Milwaukee, Wis.; Charles Thaddeus Terry, chairman legislative board A. A. A.; Walter S. Schultz, counsel Connecticut State Automobile Association, Hartford; W. W. Cocks, congressman from New York; George B. Ellis, Automobile Club of Southern California, Los Angeles.

WILDWOOD HOLDS BIG CARNIVAL

Straightaway Racing, Reliability Run and Show Are Features of New Jersey Celebration—Fiat and Chadwick Have Battle Royal for Honors in Speed Tests

Wildwood, N. J., July 4—Twenty-five thousand people who lined the mile straightaway on the Central avenue boulevard went wild this afternoon when Paul Schill, in his 120-horsepower Fiat, not only broke Montague Roberts' gasoline record of :44 for the course, but also Bert Holland's Stanley steamer course mark of :43, with a dash in :42⅘. But it was not without a fierce battle with Willie Haupt and his Great Chadwick, of less then half the Fiat's power, that Schill was able to capture the honors of the day. Each car made three official trials, and, while Schill got under Roberts' figures but once, Haupt twice succeeded in besting Roberts' time, and an averaging of the times made shows that the Fiat did but 2-15 second better per mile for the three trials than did the Chadwick. The Chadwick was handicapped in that in practice just before the race a filing became wedged between the sliding member on the square shaft, and Driver Haupt could not use either of the three reductions; hence the trials were made from the start on high gear, so that with only 250 yards start, the car got the gun at barely 45 miles an hour, so it probably was going a full 95-miles-an-hour rate to get :43⅘.

Joe Parkin, Jr., tried out his father's Parkin 40, and did :53 and :55⅘; the Chalmers-Detroit 40 did :51⅘, and C. J. Swain drove his Apperson 48 over the course in :52⅘. The Swain effort, by reason of the driver being an amateur, was especially noteworthy. The Fiat, Chadwick, Chalmers-Detroit, Apperson and Parkin were the only cars to get into the select "under-the-minute" class.

The Fiat romped away with the free-for-all in :49⅘, and the four-cylinder-over-$4,000 class in :53⅕, beating out the Parkin and the Apperson, respectively.

After Eddie Wilkie had annexed the less-than-$1,250 class with his Buick 18, and Walter Cram had captured the $1,251-to-$2,000 class with his Mitchell—the time for the latter race, by the way, being nearly 5 seconds slower than that for the former—the officials ran up against a snag. Frank Lescault, driver of the P. & S. car, protested all the other cars in the $2,001-$3,000 class because they did not carry fenders. His protest was ignored, and although it developed that his car ultimately made the fastest time in the race, 1:13⅘, he left the course in disgust, withdrew all his other entries and departed for New York. The race was then re-run as a special, substituting a flying for a standing start, and W. Mullen's Thomas 40 won first prize with a 1:02 trip.

In the race for six-cylinder cars, J. M. Hendricks' 80-horsepower Chadwick, driven by F. I. Nordall, beat the Parkin 40 to the tape by the close margin of ⅕ second in 1:00 flat. Two Thomas 40's and a Premier 45 fought it out in the $3,001-to-$4,000 class, and the Thomases finished one-two, W. Mullen making the best time—1:04⅘. Summary:

GASOLINE CARS, COSTING LESS THAN $1,250

Car	H.P.	Driver	Time
Buick	18	Wilkie	1:28 1-5
Mitchell	20	Cram	1:28 2-5

GASOLINE CARS, COSTING FROM $1,251 TO $2,000

Mitchell	35	Cram	1:33
Overland	24	Ford	1:35 4-5

GASOLINE CARS, COSTING FROM $3,001 TO $4,000

Thomas	40	Mullen	1:04 2-5
Thomas	40	Magraw	
Premier	45	Sprankle	

FOUR-CYLINDER CARS, COSTING OVER $4,000

Fiat	120	Schill	:53 1-5
Apperson	48	Swain	1:01 2-5
Stearns	50	Goodin	

SIX-CYLINDER GASOLINE CARS

Chadwick	80	Nordell	1:00
Parkin	40	Parkin, Jr.	1:01 1-5

FREE-FOR-ALL

Fiat	120	Schill	:49 4-5
Parkin	40	Parkin, Jr.	:58 4-5
Chalmers-Detroit	40	Brown	

SPECIAL FOR GASOLINE CARS, COSTING FROM $2,001 TO $3,000*

Thomas	40	Mullen	1:02
Pennsylvania	30	Zengle	
Apperson	24-30	Davis	

TIME TRIALS, OPEN TO ALL CLASSES

Fiat	120	Schill	:42 3-5
		Schill	:44 3-5
		Schill	:45 2-5
Chadwick	50	Haupt	:43 2-5
		Haupt	:43 4-5
		Haupt	:45 4-5
Chalmers-Detroit	40	Brown	:51 2-5
Apperson	48	Swain	:52 2-5
Parkin	40	Parkin, Jr.	:53
		Parkin, Jr.	:55 3-5
Thomas	40	Magraw	1:01 1-5
Apperson	24-30	Davis	1:06 3-5
Buick	18	Wilkie	1:13 3-5
Cleveland	40	Wood	1:13 3-5

* Flying start. Race first run from standing start, and won by P. & S. car, driven by Frank Lescault, who protested all the others, and left course when protest was turned down. Lescault's standing-start time, 1:13 1-5.

This morning two-score cars participated in the motor car parade on the boardwalk. The first prize, for the largest and handsomest car in line, went to W. Wayne Davis, whose big Matheson was adjudged the winner.

As a curtain-raiser to the carnival there was a reliability run from Gloucester yesterday, which resulted in fourteen perfect scores. At a meeting this evening it was decided to draw for the big cup hung up by the Wildwood club for the winner. J. M. Hendricks, who drove his 80-horsepower Chadwick down, was the lucky one. About forty cars started from Gloucester, and although a few showers were encountered everything went well until Magnolia was reached. There a constable held up every driver, and if he was unable to produce his license, card and certificate the car was ordered to about-face and beat it back the way it came. More than a dozen cars were thus removed from the contest, and the howl which followed was long and bitter. Evidences of traps were numerous all along the route, and many of the participants in the run will likely hear from Commissioner Smith's cohorts early next week. An outdoor motor car show was held on the brilliantly-lighted boardwalk in the evening, all the contestants in the afternoon's run and the cars of many visitors being lined up at the side of the broad esplanade, with glib conversation artists on hand to extol the merits of the several makes.

MEET AT KANSAS CITY

Kansas City, Mo., July 4—As an accompaniment to horse races which had been staged earlier in the day, four motor car events were pulled off at Elm Ridge, the mile track of this city. The track was rather rough after the antics of the ponies and fast time was out of the question. In order to take no chance of accident, it was decided to run the 10-mile race, with a field of six, in two heats. The winners of each heat then met in the final. Joe Matson, who had bad luck with his Corbin in the hill-climb here a week ago, took this event and the trial against time. Summaries of the motor races:

Event No. 1, 3 miles, runabouts up to $1,200—J. Breed, 18-horsepower Buick, won; time, 4:10. O. W. Hiatt, 18-horsepower Buick, second. C. H. Apple, 18-horsepower Ford, third. George M. Gilson, 18-horsepower Reo, fourth. Harry Hathaway, 14-horsepower Maxwell, out on second mile.

Event No. 3, 5 miles, roadsters over $1,200—A. O. Brooks, 40-horsepower Stoddard-Dayton, won; time, 7:37 1-5. Charles Leverdoske, 24-horsepower Maxwell, second. E. Nason, 18-horsepower Stoddard-Dayton, third.

Event No. 4, 10 miles, free-for-all for stock cars, run in two heats, final heat between Pope and Corbin, winners of first and second heats—Joe Matson, 30-horsepower Corbin, won; time, 10:41. H. Holzhauer, 30-horsepower Pope-Hartford, second. C. Levendoske, 24-horsepower Maxwell; R. C. Greenlease, 60-horsepower Thomas; H. Hargreaves, 30-horsepower Corbin, and Alfred Dale, Acme, also ran.

Trial against track record of 1:01 for mile—Joe Matson, 30-horsepower Corbin, time 1:01 3-5; A. O. Brooks, 40-horsepower Stoddard-Dayton, time 1:04 3-5; H. Hargreaves, 30-horsepower Corbin, time 1:05, and H. Holzhauer, 30-horsepower Pope-Hartford, time 1:07.

PAYING OFF POPE DEBTS

Hartford, Conn., July 3—Vice-Chancellor Howell, of the court of chancery in Newark, has signed the necessary order of authorization for the receivers of the Pope Mfg. Co., George A. Yule, Egbert J. Tamlyn and Albert L. Pope, to continue operations for another year. As stated in last week's issue of Motor Age, the receivers have paid a 25 per cent dividend to the approved creditors, and an appeal was made to the court for authority to continue business for another year and manufacture 700 motor cars and 50,000 bicycles for the 1909 trade. There was much opposition to the granting of this request, as it was contended that the shareholders should furnish the $800,000 required for the continuance of operations. The court order sets aside all this and now things will proceed as before. Vice-Chancellor Howell likewise signed an order directing

parties interested to show cause why the receivers should not be permitted to accept the offer of Howard Cole to purchase stock of the Columbia Steel Co., which is owned by the Pope company, for $190,000. July 14 is the date set for this transaction. The application was made by the receivers' counsel, and in a petition filed by the attorneys for the receivers it was set forth that the Columbia Steel Co., which is a Connecticut corporation capitalized at $300,000, owns and operates a plant at Elyria, O., where it is engaged in the production of cold rolled steel. In past years the concern has been operated at a profit, but during the recent depression the net gain for the fiscal year was materially reduced; in fact, there is some doubt if the year's business will result in any profit at all. The company is a creditor of the Pope company to the extent of $54,072.25, which claim has been allowed, and Howard Cole has offered to pay $135,927.25 for the stock and waive all claim for the sum due to the Columbia company from the Pope company. The proposition, according to the petition, is approved by a majority of the stockholders of the Pope company, and is acceptable to the creditors' committee. It is expected that immediatly upon the consummation of the deal for the sale of the stock the receivers will make application to pay another 25 per cent dividend, and if this is approved half of the company's indebtedness will be wiped off the slate by the payment.

COAST RELIABILITY RESULTS

Los Angeles, Cal., July 6—Special telegram—The annual summer tour and regularity contest of the Southern California Automobile Dealers' Association from Los Angeles to San Diego and return via Riverside and Redlands ended tonight, fourteen of the twenty-two starters having perfect scores. The distance was 355 miles along the shores of the Pacific and then inland over the mountains. Gladys Moore, an 18-year-old girl, who has owned a car but 3 weeks, drove a single-cylinder Cadillac through to a perfect score. Mrs. G. W. Burt also made a perfect score in a Tourist. The official results were:

Name of car	Entrant	Final standing
Tourist	J. S. Conwell	Perfect
Elmore	Elmore M. C. Co.	Perfect
Auburn	Central M. C. Co.	Perfect
Tourist	G. W. Burt	Perfect
Tourist	V. S. Beardsley	Perfect
Auburn	Joe Pike	Perfect
Cadillac	Gladys Moore	Perfect
Mitchell	Greer Robbins	Perfect
Tourist	W. H. Congdon	Perfect
Tourist	J. H. Bennett	Perfect
Cadillac	Lee M. C. Co.	Perfect
Studebaker	Lord M. C. Co.	Perfect
Stoddard-Dayton	F. A. Raney	Perfect
Autocar	Holst Bros.	Perfect
Tourist	G. W. Lull	20 points
Auburn	Central M. C. Co.	10 points
Jackson	A. W. Gump	20 points
Tourist	A. J. Scholl	100 points
White	White Garage.	Did not finish
Auburn	J. S. Green.	Did not finish
Elmore	E. B. Smith.	Did not finish

The driver of the Elmore was arrested at Escondido because of an accident. The Jackson broke a spring and lost the road; the Auburn had tire troubles and the White did not make the first control.

IS FIRST THREE TIMES

Morton in Pullman Makes Good Showing in Track Meet at Pimlico—Stearns in Limelight

Baltimore, Md., July 5—The 40-horsepower Pullman car, driven by Robert Morton, was the star performer in the Pimlico meet held yesterday under the auspices of the Motor Car Racing Association of Maryland. This car was entered in four events, three of which it won, while in the fourth it was a good third. Morton beat E. L. Leinbach, who drove a 35-horsepower Moon car, in the 5-mile stock touring car event. With a handicap of 35 seconds, Morton won out in the 10-mile free-for-all handicap, while he had a comparatively easy victory in the 50-mile championship for stripped stock cars or stock chassis of 45 horsepower and under. The event in which Morton finished third was the 10-mile Maryland runabout championship, which was won by Leinbach in a 60-horsepower Stearns.

Leinbach also made a good showing with his Stearns in the two races in which this car was entered. In addition to winning the Maryland championship he finished a good third in the 10-mile handicap. He was scratch in this event and was beaten out only by reason of the handicap given Morton and Stains, who also drove a Pullman car. Leinbach made the best time, 10:52, in this event. Morton made the distance in 10:36 with the aid of a 35-second handicap, while Stains' time was 10:47 with a 50-second handicap. The other cars in the race, with handicaps from 10 seconds to 1 minute 10 seconds, were easily outdistanced. Leinbach made one of his miles in 1:03⅗, while his average speed for the 10 miles was 1:05⅕.

The 50-mile championship race was extremely interesting, as it really turned out to be two races in one. Until nearing the twenty-eighth mile Morton and Stains, in the Pullman cars, ran almost a dead heat in front, while just back of these two the Autocars, driven by Archfield and Brown, were fighting for supremacy. Stains' car had trouble at the point mentioned and Morton had a walkaway thereafter. Archfield brought in the Autocar second, while A. W. Behrens in a 28-horsepower Maryland, beat Brown out for third.

Robert F. Kaehler, in his 15-horsepower Ford, captured the opening event, a 5-mile contest for baby runabouts. The motor cycle event was won by M. E. Mangold, of Washington, on an Indian. Chic Thomas, the Baltimore racer, who also rode an Indian, went through the fence just as he turned into the home stretch. His machine was smashed.

Louis J. Bergdoll, of Philadelphia, failed to appear with his entries and he will, in consequence, be reported to the racing board. Similar reports will be made in regard to J. L. B. Wilhide, of Baltimore, and Thomas & Tolman, of Washington. The 40-horsepower Thomas, the entry of Wallace C. Hood, of Washington, was barred from the Maryland runabout championship because it had an extra tank on. Summaries of the motor car events:

Event No. 1, 5 miles, baby runabout class, open to runabouts costing $1,250 and under—R. F. Kaehler, 15-horsepower Ford, won; time, 6:59. Jefferson Davis, 16-horsepower Cameron, second; time, 7:13. George E. Norwood, 20-horsepower Overland, also ran.

Event No. 2, 10 miles, Maryland runabout championship, open to stock touring runabouts or tourabouts—E. L. Leinbach, 60-horsepower Stearns, won; time, 11:04 2-5. Roy Stains, 30-horsepower Pullman, second; time, 11:33. Robert Morton, 40-horsepower Pullman, third; time, 11:39. J. F. Brown, 30-horsepower Autocar, E. H. Freas, 30-horsepower Autocar, and Chester Smith, 40-horsepower Autocar, also ran.

Event No. 3, 5 miles, open to stock touring cars of 24.1 to 40 horsepower, inclusive—Robert Morton, 40-horsepower Pullman, won; time, 6:06. E. L. Leinbach, 35-horsepower Moon, second; time, 6:56 3-5.

Event No. 5, 10 miles, Pimlico free-for-all handicap—R. Morton, 40-horsepower Pullman, won; time, 10:36. Roy Stains, 30-horsepower Pullman, second; time, 10:47. Leinbach, 60-horsepower Stearns, scratch; time, 10:52; A. Behrens, 28-horsepower Maryland; C. Smith, 40-horsepower Jackson; E. H. Freas, 30-horsepower Autocar; J. E. Brown, 30-horsepower Autocar, and W. C. Hood, 40-horsepower Thomas, also ran.

Event No. 6, 50-mile championship, open to stripped stock cars or stock chassis of 45-horsepower and under—Robert Morton, 40-horsepower Pullman, won; time, 57:08. John Archfield, 30-horsepower Autocar, second; time, 62:22. A. W. Behrens, 28-horsepower Maryland, third; time, 66:18. J. F. Brown, 30-horsepower Autocar; time, 66:47. Roy Stains, 30-horsepower Pullman, also ran.

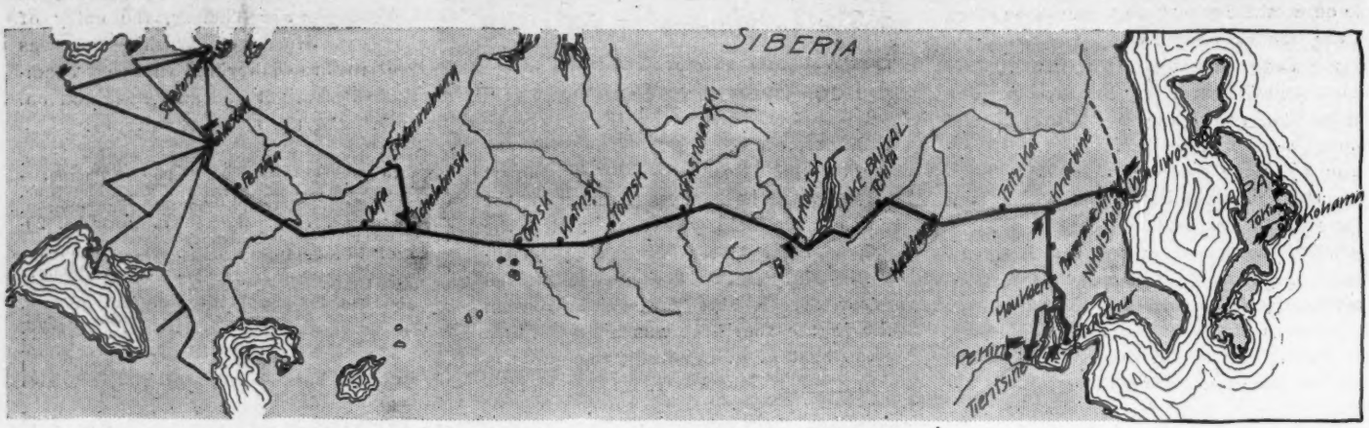
REPRESSING THE RECKLESS

Boston, Mass., July 6—The Safe Roads Automobile Association of Boston has just completed 1 year of its existence, during which it has done much to make the highways of the state safe and to repress the reckless driver. The asociation received from its members $6,118.83 to carry on its work, it being a voluntary organization, and $5,731.90 was expended. As the legislature passed a law that the highway commission should appoint four examiners to investigate accidents, it was thought the association would dissolve. The executive committee gave the matter careful consideration and decided to continue another year at least to see how the new law works out. During the year the association examined 313 cases, of which Charles Bissett, its investigator, thoroughly went into the details of 103 that warranted his efforts. Seven of the eight bills presented to the legislature by the association were passed. The members of the Massachusetts highway commission have stated that they think the work of the association has been of great value to the public in the past, and will be in the future, and that they strongly desire that its work be continued.

SWEDEN HOLDS ROAD TEST

Copenhagen, June 24—A 10-14-horsepower Adler—a car made in Germany—was declared the winner of the endurance and regularity contest promoted by the Dansk Automobile Club. There were only fourteen starters. A total of about 500 miles was covered in 2 days. C. Christiansen, in a Delaunay-Belleville, was second.

WITH NEW YORK-PARIS CARS IN SIBERIA



MAP SHOWING ROUTE NOW BEING FOLLOWED BY NEW YORK-PARIS RACERS

BY E. LASCARIS

CHICAGO, July 6—The third leg of the New York-Paris race offers in many regards the greatest interest, due to the different order of things extending from Vladivostok on the eastern border of Siberia to St. Petersburg, which is a distance of 7,500 miles, or greater than the ground covered by a motor car in a round trip from New York to San Francisco. This stage of the journey is resulting in a race among the Thomas, Protos and Zust, the de Dion car having been recalled at Vladivostok, Marquis de Dion proclaiming that since the car did not make any attempt to enter Alaska, due to the opposition of Bourcier St. Chaffray, the director of the tour, there was no necessity of it continuing its run over the old Pekin-Paris route of a year ago, which was successfully negotiated by a pair of single-cylinder de Dion cars. The car was sold in Vladivostok to a Pekin man and E. Lascaris, the Chicago Motor Club representative, and M. Autran, the de Dion mechanic, in company with St. Chaffray, completed the trip overland by railroad from Vladivostok to Paris, this journey by train occupying 13 days of tiresome traveling. The start from Vladivostock by the Protos car was on Friday morning, May 22, at 9 o'clock, in the midst of a blinding rainstorm, the car being manned by Lieutenant Koeppen, who was at the wheel, together with his two assistants who had been sent overland by train from Berlin, and the captain of the Russian army in full regalia, who accompanied them as a guide. The car in addition to its regular equipment carried 200 gallons of gasoline, which was enough to carry them to Pagranitchitaia, 200 miles out. Two hours later, Schuster at the wheel of the Thomas Flyer, carrying the stars and stripes, and accompanied by McAdams, the New York press representative, and Captain Hansen, who joined the party at Chicago, departed from the Grand hotel on this 7,500-mile jaunt, over roads which were new to the Thomas driver. The send-off was most enthusiastic, cheering, with profuse hat-swinging, making it a particularly exultant moment for staid, somber Vladivostok. A few hours after the departure of the two cars word reached Vladivostok of both being stuck in the mud 30 miles out. Rain had been falling continuously for over a month, the entire province surrounding the city being a sea of mire and mud. It later developed that the Thomas had difficulty with a slipping clutch. The day following, the Protos, realizing the impossibility of negotiating such roads, decided to follow the trans-Siberian railroad, not by the fitting of flanged wheels, but by driving over the right-of-way with pneumatic tires. This was rendered especially easy as the gauge of this railroad is 10 inches wider than that used in America. The track being well-ballasted between the ties, it was easy to run with one wheel between the rails and the other outside. Traveling in this manner offers little difficulty, as the trains do not average more than 20 to 25 miles an hour, a speed possible for the cars to make on the ballast. On May 25 Schuster stopped in the midst of a tremendous thunder storm, realizing the foolishness of going further on the rain-soaked roads, and returned to Nikoloskie, where he decided to follow the example of the Protos by going on the railroad track, the Protos at this time having a good lead. Three days later Schuster, in a vain attempt to overtake the Protos, had a narrow escape from collision with the St. Petersburg express in a tunnel. On the 29th the Thomas suffered a 5-day delay, due to slight breakages during which time supplies had to be obtained from Harbin, while the Protos car was establishing a lead of 6 days. Its going was not of the best, it overturning on one or two occasions, but being righted with the assistance of the militia which is

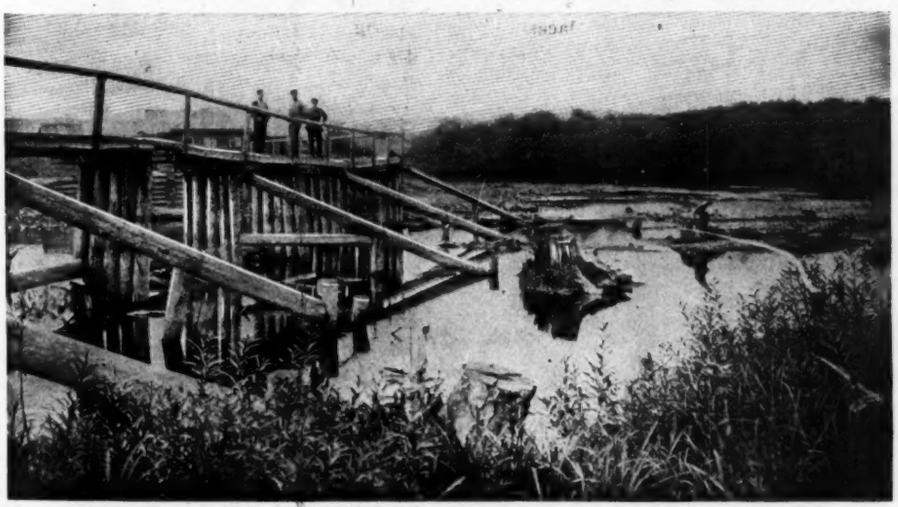
PROGRESS OF THE RACE

Last reports from the New York-Paris race state that the Thomas was at Marienovka July 1 and that the Protos was at Omsk July 4. The distance between the two places is 30 miles, Marienovka being 5,842 miles from Paris and Omsk 5,872.

OMSK, SIBERIAN CITY WITH FAIRLY GOOD ROADS

located at posts every few miles along the railroad to guard it. Ten days later, on June 8, the Thomas and Protos were still using the railroad tracks, the Protos having a lead of 200 miles or 4 days on Schuster. At this time the Protos was 706 miles from Vladivostok and the Thomas 487. The Zust, which started later in the contest, was but 144 miles out. So continued the Thomas-Protos race with varying successes. On June 13 Schuster had gained a day on the Protos, being but 130 miles behind it, and on which day he left the railroad tracks, owing to being held at the stations when ahead of time by the railroad authorities. June 16 was a red-letter day in the contest, as the Protos reached Chita, 1,420 miles from Vladivostok, and won the $1,000 prize which was posted for the car reaching that point first. There is another $1,000 up for the car first into St. Petersburg and Schuster claims the first mortgage on this. At Chita, the Protos had but a 3-day lead. On the 17th Schuster landed his Thomas Flyer there but 2

MILITARY ROAD ON WESTERN SLOPE OF OUREL MOUNTAINS



TYPICAL RUSSIAN BRIDGE IN THE OUREL DISTRICT

days behind in the big chase. June 21 brought a climax in the situation, the Protos on this day arriving at Lake Baikal, across the south end of which the cars had to be transported on ferry, it being impossible to follow the roads around the lake and equally impossible to make use of the railroad track. On this date the Protos was on board a steamer waiting to start. Speculation had it the Thomas would arrive in time to catch the boat. But a half hour remained before the time of starting; this became minutes, then seconds; the boat left its moorings, the Thomas had not then arrived. It was a matter of a couple of hours after the sailing of the boat until the Thomas made its appearance and it had to wait for the next boat.

Irkutsk, the home of Captain Hansen, was the next objective point, its exact location being 1,979 miles from Vladivostok. At this point the Thomas and Protos were together, but Schuster was delayed 9 hours after the departure of the Protos waiting for gasoline. Two days later, June 23, when leading the Thomas by 100 miles, the Protos was mired at Kansk. During this delay Schuster was making every effort to overtake the German, which was accomplished at Tomsk on June 27. But luck was again against the Thomas, the car missing the ferry-boat and allowing the German to again take the lead. Tomsk is 14,760 miles from New York and 6,730 from Paris.

Before leaving Vladivostok every precaution was taken by the rival drivers. Each sent a man ahead by the Trans-Siberian railroad to look after the gasoline supply as far as Irkutsk. This man had 500 gallons for the run, which at 60 cents a gallon made a $300 gasoline bill. His instructions were to stop every 100 or 150 miles and leave the gasoline in gallon cans at the railroad depots. The gasoline was procured from Kunz-Alberts, the big department store of Vladivostok. The proper distribution of the oil was intrusted to this same official, who was rewarded to the extent of $3 per day by the Russian government. Schuster's Thomas, when he pulled out, appeared the same as when it left New York or Chicago, and carried six extra tubes and six tire casings.

From Omsk, where the contestants are at the present time, the route is level to Tchelebinsk, the foot of the Ural mountains, and at which point the road divides, offering two equally appetizing courses to St. Petersburg. One is by way of Ekäteringburg, the other leads to Moscow and thence to St. Petersburg. It is optional which course the contestants take.

ROAD AROUND SOUTH END OF LAKE BAIKEL

The Readers' Clearing House

CRITICIZES IDEAL LUBRICATION

Boston, Mass.—Editor Motor Age—In the issue of June 25 under the heading "Pierce Ideal Lubrication," Theo. B. Davis, of Evanston, Ill., claims the Pierce-Arrow has the only ideal lubrication. This lubrication I think is far from being "ideal," as he does not know if the oil is feeding to every bearing, although he can see in the gauge at the dashboard that the oil is up in the tank. He further asks if anyone ever heard of a Pierce-Arrow in bad shape on account of carbon. Yes, I have. With the present Pierce oiling system it is easy to carbonize the cylinders. If you should stop on an upward grade the oil would run down in the crankcase, which is not separated into compartments as in engines using splash lubrication. The largest amount of the oil would run from the pit where the pump is, which is in the center of the crankcase, to the last cylinder nearest the dashboard. The pipe feeding the last bearing would supply more oil in the end of the crankcase. On restarting the engine the last cylinder would naturally get most of the oil. If the hill is long or steep the other cylinders would be practically running on dry bearings and the last cylinder would most likely foul its spark plug on account of too much oil. It stands to reason that this oiling system will carbonize the engine.

In order to have ideal lubrication in the Pierce-Arrow, in my opinion, it should be constructed as follows: The perforated crankshaft and the oil pump are all right where they are at present. The crankcase should be tapered toward the center where a large oil pit should be located. Instead of having the oil tank where it is now, the tank should be placed on the inside of the dashboard under the hood where it would be kept warm. In place of the small strainers used in the pipes leading to the bearings, have a large wire basket fit inside the tank, like a carbide basket in a generator. A pipe from the oil pump deposits the oil in the basket where it is strained. On the bottom of the tank should be as many shut-off valves as there are bearings in the engine. These valves should be controlled by one lever to shut off or open supply of oil leading through the dashboard to sight feeds within view of the driver. The tips of the pipes which point downward toward the receiving cups which are connected with the pipes leading to the bearings can be drilled according to the amount of oil needed for the bearings. The present employed oil gauge can be attached to the dashboard to tell the amount of oil used in the tank. With this oiling system there is no danger of an engine carbonizing or raising a cloud of smoke by the sudden speeding up of the engine, as the shut-off valves can be closed by a lever within easy reach of the driver, thereby keeping the oil in the tank. I think this will prove to Mr. Davis that he does not get the same amount of oil in the same places on steep hills as he claims he does with the present Pierce system of lubrication. In using a drilled crankshaft with this lubrication, which I have suggested, one should not forget to use a universal joint at joints between the motor and transmission. Otherwise any binding, alignment, or giving of frame or subframe tends to break the crankshaft near the flywheel where the drilled holes meet the last bearing.—René Le Luomier.

CONTROLLING THE MOTOR

Waterbury, Conn.—Editor Motor Age—In our family are a '05 20-horsepower Stevens-Duryea and a '08 18-horsepower Stoddard-Dayton. The Stevens engine seems to speed up on the spark and the Stoddard on the throttle. On high the speed of the Stevens seems to depend on the spark and in the Stoddard the throttle. The timer on the Stevens seems to turn farther when advanced than that of the Stoddard. Does the carbureter make the difference, or what is it? If you would please answer I would be much obliged, as it is queer to run one with the spark high and the other with it low, I can assure you.—Howard P. Hart.

You do not state whether either of the cars in question is equipped with a magneto or not, but from what you say, Motor Age presumes not, and in this case the difference in running is to be accounted for by the fact of lag in the two ignition systems of the cars. According to popular impression, electrical action is absolutely instantaneous, or in other words, that the time intervening between the making of contact and the accomplishment of the desired result at the other end, is not a measurable period. This is far from being the case, for while electrical action is extremely rapid, magnetism requires an appreciable interval of time to manifest itself. The iron core of the primary winding of the coil must become magnetically saturated before it attracts the armature of the trembler, and both the inertia of the latter as well as the resistance of its spring must be overcome before the coil can act, so that there are no fewer than three factors that influence the time of occurrence of the spark in the cylinder. If the trembler spring is weak, there will be a further delay in rupturing the contact with a corresponding delay in the occurrence of the first high-tension impulse in the secondary winding. If the spark is caused to occur exactly at the upper dead center, or a little before the piston reaches that point, then only the throttle will have any effect on the motor's speed, assuming, of course, that the ignition adjustment is allowed to remain as above stated. This is evident on several foreign makes of cars on which there is no provision whatever for advancing the ignition, the occurrence of the spark being retarded slightly for starting only. Such cars control on the throttle alone, and this would appear to be the case with your Stoddard-Dayton, a view that appears to be further supported by the fact that a greater range of timing is provided on the Stevens-Duryea. Motor Age thinks, however, that if you will always run the motor of the latter with the spark pretty well advanced, consistent with the work it is doing, you will find it possible to effect most of the control by means of the throttle, and you will then be getting a higher percentage of efficiency out of the motor, as the delayed spark wastes fuel and tends to heat the motor, owing to the slow burning. It will be evident that when ignition is taking place at the proper point, only an increase or decrease in the amount of fuel can have any effect on its speed and power. Advancing the spark only gives increased power of itself by permitting the motor to take better advantage of each charge of fuel. In other words, it is not adding to the power that can be obtained from a certain charge, but is producing a larger percentage of effective work from the same charge than where the spark is late.

SMALLEST CAR PART

Marshall, Minn.—Editor Motor Age—Will Motor Age publish the name or description of the smallest essential individual part or piece of a car which goes to help make up the assembly of parts constituting the modern gasoline touring car ready for use? By essential I mean a part which, if removed from the car, would render it not fit for service on the road.—A. D. Hard, M. D.

This is a query the answer to which will depend upon the car itself. Assuming a single-cylinder car using high-tension ignition, probably the platinum contact piece from the end of the trembler screw is the smallest piece, the loss of which would render running difficult. It measures not much more than $\frac{1}{16}$ inch in any dimension. It might be possible to run without it, but not satisfactorily, or for any length of time. The loss of the screw itself, which measures $\frac{1}{2}$ or $\frac{3}{4}$ inch across its circular top and is about

¾ inch long by ⅛ inch diameter, would prevent running altogether. The loss of the locking nut from the needle valve of the carbureter might prevent any use of some cars, owing to the needle point turning very loosely. This is somewhat akin to the platinum contact point, as the car could be used, but the loss of the needle itself would prevent this and probably it is next on the list, although on some low-priced cars on which pinned joints are employed the loss of the pin from such a place as the connection of the propeller shaft to the universal would render the car useless until it was replaced. On a car using a high-tension magneto alone for ignition, the loss of the small carbon brush collecting the current from the primary winding of the armature would prevent the starting of the motor. This part is doubtless next in size to the platinum screw above mentioned. Motor Age is not certain that any of the foregoing comply exactly with the requirements of your definition of essential, individual parts, and they do not, if you mean by this a part complete in itself. In such a case, the loss of a spark plug from a single-cylinder motor would probably answer your query as well as anything. A little study of the question thus raised seems to lead to an endless number of possibilities and attention to the latter on the part of amateur motorists would reveal things about their cars the very existence of which they have never even suspected and would be the cause of their becoming very much more familiar with the machines they have been driving.

FRONT WHEELS WOBBLE

Canton, Ill.—Editor Motor Age—Having received so much valuable information from the Readers' Clearing House, I am led to believe that I may obtain from that source some aid in determining the cause of a bad case of "staggering" or "wobbling" of the front wheels of my car; it is a 1908 touring car with 36 by 4-inch tires, and after following suggestions of the makers of the car we are still unable to account for the fault, as all joints from radius rod through to steering knuckles appear to be properly tightened, with the coil springs on each side of the ball-cups of the reach-rod washered up tight, and we are assured by the makers that the staggering is positively not caused by backlash or play in the steering-gear itself, and we have tried different adjustments of the tie-rod without effect on the "staggering." Who can help us to solve the difficulty?—H.

It certainly appears that the factory is the proper place to have this staggering or wobbling of the wheels made right. For your own satisfaction you can make several investigations to discover the cause. First, this wobbling may be due to loose bearings carrying the front wheels. As the bearings in this car are of the cup-and-cone ball type, they can be adjusted by the regular means. If they are not too loose, it may be that the wheels are sprung or the rims put on poorly, which would result in an exaggeration of the staggering effect. To determine the back-lash of the steering-gear, jack the two front wheels up, have one person hold the steering-wheel and one other on each front wheel so as to note if both wheels move in harmony as well as to determine the amount of back-lash. In a new car of your make the steering-wheel should not have a back-lash of more than 3 or 4 inches, and frequently in new cars of this build it does not exceed a couple of inches. The steering-gear is of the worm and sector variety. Motor Age will be glad to have the opinion of its readers expressed in these columns relative to this steering-gear condition.

IDEAL CAR STRIKES MARK

New York, N. Y.—Editor Motor Age—I have been very much interested in the ideas of Motor Age's readers regarding the ideal car, and particularly in the article by J. J. Ide published in a recent issue and illustrated by a sketch. The article, headed "Gotham's Ideal Car," appears on page 19 in the issue of June 18. It is remarkable how closely Mr. Ide has come to the Palmer-Singer Six-Sixty car in everything but price. Here are the Palmer-Singer specifications:

Horsepower—60
Number of cylinders—Six
Cylinders—Cast in pairs
Cylinder size—4¾ by 5 inches
Honeycomb radiator
Gear-driven cylindrical pump
Gear-driven fan and wheel
Dougle ignition system
Bosch magneto and battery
Lubrication by mechanical oiler
Gear-driven pump in crankcase
Disk clutch
Selective gearset
Four forward speeds, direct drive on third
Selective transmission
Steering worm and segment
Springs—Semi-elliptic, 34-inch trunk, 52 inches rear
Tires—34 by 4 inches front and rear
Full shock-expanding equipment
Brakes—All expanding and equalized, dust-proof, four on rear wheels.

R. Fayers.

WANTS IDEAL CAR

Norwich, N. Y.—Editor Motor Age—I want to buy a motor car, when I can find one built somewhere near my notion. I have had three cars and on account of their low power and heavy weight and unyielding construction they have ground out a small fortune in tires and repairs. Am now waiting for my ideal car. The following are suggestions for specifications: Six cylinders, 4 by 4¾ inches, engine and transmission on the principle of three-point support. Wheelbase, about 115 inches. Shaft drive with floating axle, springs semi-elliptic, front 2½ inches wide and 50 inches long, rear side springs, 2½ by 60 inches, with cross-spring at rear, all side springs nearly straight, with sufficient number of leaves under side to support load and one or two leaves on top to prevent excessive upward bounds. Wheels, artillery type, light construction for 36 by 3-inch quick detachable tires, body of light construction, side entrance, to seat four people. Bearings, Hess-Bright throughout; weight, complete, not to exceed 2,000 pounds. Will Motor Age kindly answer through its columns if there are any cars now made that will come quite near the above specifications? In my opinion, a car designed on above lines and kept within the 2,000 pounds would outsell any car on the market today.—C. W. L.

Motor Age does not know that there is any car on the market at the present moment that complies with your specifications in their entirety, and doubts very much if such a car is built, but there are some that approximate it in more respects than one. Every motorist of any experience has formulated a more or less clear idea of what he wants in the shape of a car, but as yet Motor Age does not know that any of these ideal cars have been built. If there are any of its readers who think they have cars that come sufficiently near to the requirements as above set forth, here is his chance to trot it out.

MAY USE SOLID TIRES

Wawaka, Ind.—Editor Motor Age—I have a five-passenger Queen car and desire to know if I can use solid tires on the rear wheels of it with any measure of success. I do not run to exceed 15 to 20 miles per hour. I do my own repair and machine work and understand the care of machinery, therefore I could keep my machinery in order, though the burrs might have a tendency to work loose, as is sometimes claimed they will do. About how many miles will a solid tire fitted to a motor car run?—John W. Zimmerman.

Solid rubber tires can be used on your car providing you do not exceed 20 miles per hour over good roads and 12 to 15 on poor roads. If the tires are well kept you should get an unlimited mileage. The only danger in using solid rubber tires is the crystalizing of the axle due to the excessive vibration, but if the speed is not great this trouble will not be much of a factor. A little alteration in the spring suspension is advisable when using solid tires, putting in springs that will be more resilient and flexible than those ordinarily used with pneumatics.

COMPARING IGNITION SYSTEMS

Chicago—Editor Motor Age—Will Motor Age please answer through the Readers' Clearing House the following questions? Would Motor Age advise purchasing a car equipped with make-and-break, using low-tension magneto and jump spark plug battery ignition systems? Comparing make-and-break using low-tension magneto, and jump spark using high-tension magneto, what are the advantages and disadvantages of the different systems?—C. A. L.

Motor Age would, where the advisee was inclined that way, just as it would advise an intending purchaser to invest

in a car equipped with a high-tension system where he favored the latter. In the combined system mentioned, the battery end is only used for starting, and practically all running is done on the magneto, although it is also possible to start on the latter by spinning the motor. To compare the two systems briefly, it may be said that the low-tension is simple electrically and complicated mechanically, while the high-tension system involves electrical complication with electrical simplicity, but it would seem as if their differences were about to be merged by the adoption of a magnetically-operated plug, using current from a low-tension magneto, this system having just been placed on the market. But even with the mechanism now required to operate it, we think the consensus of opinion is to the effect that the low-tension system is the more reliable. It is considerably more expensive to make than the average high-tension system, as the small parts of the igniters and their operating mechanism must be made very accurately in order to give good service. The almost entire freedom of the low-tension system from electrical troubles is what causes it to appeal to many, while the lack of mechanical complication is a strong argument in favor of the high-tension. The subject is one in which the comparison can naturally be carried to much greater lengths.

GLENCOE SPEED TRAPS

Evanston, Ill.—Editor Motor Age—For the benefit of motor car owners and chauffeurs the following may be of interest in the Readers' Clearing House: Motor car owners and chauffeurs are advised that speed traps are constantly set in Glencoe, Ill., equipped with an electrical device such as used to time races and hill-climbs, etc. At this writing they are stationed just north of Hubbard's hill on the good stretch of three or four blocks on Sheridan road.—A Victim.

Motor Age has upon investigation discovered that these speed traps are changed periodically, so that motorists traveling from Chicago north on Sheridan road had better observe the legal limits not only through the municipality of Glencoe but through several of the other north shore suburbs, where the motorphobes are beginning to ape the Glencoe tactics.

KEEPS OIL FROM CLUTCH

El Reno, Okla.—Editor Motor Age—Will you please give me some information in the Readers' Clearing House? I have a 16-horsepower touring car, planetary gear, leather cone clutch for direct driving, located in flywheel. The flywheel is not solid, but is spoked. I have replaced the leathers in the clutch once before, but not on account of the clutch slipping. I just replaced them when the car was taken down because it was a good time to do so. The leathers in the clutch are not old, but the clutch will not hold.

THE IDEAL MOTOR CAR

Horsepower—45-50
Bore—5 inches, stroke 4¾ inches
Number of cylinders—Four, cast in pairs
Wheelbase—116 inches
Springs—Full-elliptic
Clutch—Multiple disk
Transmission—Selective, three forward and reverse, direct on third
Drive—Shaft
Brakes—Two sets, one on rear wheel and one on transmission
Ignition—Bosch magneto and Atwater Kent generator
Passenger accommodation—Five
Kind of lubrication—Splash feed, reservoir under crankcase
Weight—2,500 pounds
Tires—Clincher
One beam axle
Price—$2,800
Calumet, Mich. Chas. P. Clark

It slips all the time. I put in stronger springs, but this did not help. I think it is on account of oil from crankcase coming out through main bearing on flywheel side and getting in the clutch through the spokes of flywheel. I have tried everything—carbide dust from gas generator, street dust, Fullers earth, and Fullers earth mixed with glycerine, all to no avail. The clutch will begin slipping again in less than 2 miles running after fixing it. If Motor Age can help me out same will be appreciated.—R. S. Trulock.

No friction clutch can be made to hold where it is exposed to lubricating oil in any quantity and nothing that can be put on the facing will prevent the lubricating oil from causing it to slip. To remedy such trouble it would be advisable to attend to the end bearing of the crankshaft in order to prevent as much oil as possible from coming through there, as was doubtless the case when you got the car originally, and also to fill the spaces between the spokes of the flywheel with thin sheet metal or a similar oil-guard, unless the flywheel is meant to act as a fan, in which case it will be necessary to keep the main bearing oil-tight.

FRICTION-DRIVE EXPERIENCES

Milford, N. H.—Editor Motor Age—What has been the experience with friction drives for rough and hilly roads, such as are common in New Hampshire? I am told by almost everyone that they will slip, and are only good for fine roads.—James P. Melzer.

This is something that Motor Age will have to refer to its readers for a definite answer, not having had any experience in the use of such a car in hilly country. It is well-known, however, that the friction transmission is an excellent type where the load is at all uniform or steady and that its chief drawback is not so much its inability to take care of an overload as it is to transmit an excessive load, suddenly appiled, as in pulling the car out of a mudhole, or in starting from dead on a very steep grade. Motor Age understands, however, that manufacturers of cars employing this type of transmission have developed it to a point where it is unusually successful in situations for which it was formerly considered as practically valueless. Every car is equipped with a frictional element in some part of its transmission, namely, the clutch, so that it is not the use of friction for driving, but the manner in which it is applied, that constitutes the drawback.

FUEL CONSUMPTION ON ROAD

Hamilton, O.—Editor Motor Age—In any of the endurance runs or economy tests made on gasoline cars, has there ever been any statistics kept for comparison on a car weighing 1,000 pounds, one weighing 2,000 pounds, one weighing 3,000 pounds as to the amount of cost per mile for gasoline, oil and tires? What would the proportion be between gasoline motor cars and steam motor cars?—Charles A. Frostel.

The following table will give you the desired information:

Name	Weight Lbs.	Gasoline Consumption Gal.	Qts.	Oz.
Pierce	4,545	4	2	11
Berliet	4,540	4	2	15
Ford	1,675	2	3	15
Oldsmobile	3,060	6	..	13
Knox	3,360	8	1	18
Dragon	3,530	6	1	29
Apperson	4,760	6	1	11

The distance of the run from which these figures were obtained was approximately 100 miles.

HOT-WIRE IGNITION

Janesville, Wis.—Editor Motor Age—The Owen Thomas Motor Car Co., Janesville, Wis., is experimenting with motors designed along the line suggested by Victor Lougheed in his series of articles in Motor Age 1 year ago. The direct fuel injection seems to solve so many problems that the company is even going to try it with hot-wire ignition. I have never seen any of the old hot-wire-ignited engines, although a great many have been used in England. Can you tell me where I can find out anything about the standard hot-wire practice as regards voltage, current consumption and the details of the hot-wire plug? Would it be possible to get hold of a hot-wire plug in this country?—W. Owen Thomas.

Motor Age is aware of but one motor at present in use having the hot-wire or incandescent tube ignition, and that is largely an experimental one. Text-books give little information on hot-tube or hot-wire ignition.

TRADE DIRECTORY

New London, Wis.—Editor Motor Age—Kindly advise whether there is a book published giving all the names and addresses of motor car manufacturers of the United States; if not, where could I obtain such a list?—H. H. Rohlf.

A book containing the names and addresses of all motor car manufacturers in the United States is the Automobile Trade Directory, which may be obtained from the Class Journal Co., 1200 Michigan avenue, Chicago, Ill.

Legal Lights and Side Lights

CANNOT COLLECT DAMAGES

Attorney-General Dana Malone of Massachusetts rendered an opinion a few days ago that will prove of interest to other states that are engaged in keeping their roads in good shape. The highway commission had received claims for damages from persons who claimed they suffered by reason of the commission having oiled certain roads. One woman put in a claim for damages to a panama hat, silk dress, veil and coat and another claim was from an owner of a motor car. These claimants stated that having passed over a recently oiled road the oil splattered up and did damage to apparel and the car. Other claims are now in process of being filed. To determine the liability of the state in this matter and as a guide to its work in the future, the commission asked the attorney-general to render an opinion. He holds there is no liability for damages on the part of the state in such cases, there being no law to cover the matter. He says that the statute limits the recovery of damages to "want of repair" and to "defects in the highway." He held that the application of tar or oil does not constitute a "want of repair" and the term "defect" is not defined in the statutes. Continuing, he says: "In order to constitute a defect within the meaning of the statute, it is necessary that there should be something in the condition of the highway, either by reason of its construction or want of repair or in the nature of an obstruction, which is dangerous to the safety of the traveler and not merely damaging to the appearance of his attire or the conveyance in which he travels." In relation to cases where there were signs showing that the road was under repair the attorney-general holds that the only inconvenience occasioned was the possibility of seeking another route. He holds that even if the application of the oil was improper or negligent on the part of the contractor or agent of the commonwealth it would not constitute a defect in the highway.

RHODE ISLAND WILL RETALIATE

There is talk of retaliation on the part of Rhode Island toward Massachusetts motorists because of the Bay State legislature failing to take into account in passing its new law that every owner of a car is not a driver. At the hearing on the bill this fact was pointed out to the committee and a note was made of it, but the matter slipped by without change. According to the law, if a woman, for example, comes to Massachusetts in her car and she has a chauffeur driving it, she must take the car and drive it in the state, or get a licensed driver if her man does not have a Massachusetts certificate. This clause caused some trouble last year and it was thought it would be remedied. A Providence motorist was held up under it and now the motorists there say the only way to bring about a change is to retaliate and state why by enforcing the Rhode Island law. Under that law a nonresident may drive a car 20 calendar days in Rhode Island, after which the car must be registered. As many Bay State men go to Providence frequently there is apt to be friction now that will cause trouble in both states.

WOULD DISABLE CARS

Motorists in Washington, D. C., are considerably worked up over the announcement that the police head of Rockville, Md., has asked permission of the town council to disable motor cars when the drivers thereof pass through the town at a rate of speed in excess of the limit prescribed by a town ordinance—6 miles an hour—and who ignore the command to stop. It is stated that while the speed limit of 6 miles an hour has been in force for some time it has not been strictly enforced, with the result that many motorists from Washington have taken advantage of this laxness to speed it up when going through Rockville. Henceforth the law is to be rigidly enforced and as a means to this end the town council is considering the advisability of acceding to the police chief's request that he be permitted to disable any machine whose driver declines to stop at command. The Rockville pike is much favored by Washington motorists and the Automobile Club of Washington will step in and try to straighten out the tangle that is threatened.

SWISS CASE OF INTEREST

Recently a case of interest was decided in a Swiss court. Last December a motorist, while driving his car at a rate of 37.3 miles an hour, ran into a young man riding a bicycle. The injuries cause the cyclist's death and his fiancee brought a suit for damages against the car owner, the suit being based upon a section of the Swiss code which says: "In case of body injuries or death, the judge may, in taking into consideration the circumstances, especially when there was a bad error or fault on the part of the accused, allow an equitable sum of money to the victim or his family." The lawyers of the motorist claimed that the fiancee was not a member of the family, but the judge decided to the contrary, and allowed the young woman the damages she had asked.

RULES ON TIRE DUTIES

Attorney General Bonaparte has taken appeals to the circuit court of appeals for the second circuit in the cases of Archer & Co. vs. United States, Auto Import Co. vs. United States, and Massenat Deroche vs. United States. The importations in suit consisted of motor cars "with tools and accessories," so called. Duties were assessed thereon as entireties at the rate of 45 per cent ad valorem, under the provision in paragraph 193 of the existing tariff act for "articles or wares composed wholly or in part of iron, steel, . . . or other metal." The claim in the protests was that the tires which accompanied said motor cars, but which were not attached to the rims of the wheels, were properly separately dutiable at 30 per cent ad valorem under paragraph 449, which is the tariff provision for manufactures of india rubber. It was decided in the Hillhouse case that in applying the tariff law a single article may be constructively separated into parts subject to different classifications. The petition for certiorari in that case shows that the contention was as to whether parts of a machine taken abroad and brought back with new ones in their place could be treated as separable from the rest of the machine, which seems to settle the general principle contained in the Hillhouse decision. In his decision in the three cases in question Judge Platt said that in order that merchandise which is distinctively a manufacture of rubber, or a manufacture of wood, or a manufacture of this or that, shall be classified as a manufacture of metal, it is necessary that the entire article manufactured shall have existed as an entity before importation and have been purchased as such an assembled entity. In such a case it would be an evasion for the foreign manufacturer to break the entity into fragments and expect each fragment to be treated as if it were complete in itself. In the cases at bar there was no evidence that the rubber tires in issue had been attached to the wheels of the motor cars in the country of production in such a way as to be capable of immediate use. The court further said it was to be observed also that the tires are not so markedly a part of the motor car as the nuts, bolts, beams, angle-irons, etc., because these latter things are individual to the particular make of machine and are intended to stay until worn out, when they will be replaced by like parts; but the tires are detachable and interchangeable and may or may not be used on the particular motor car. In the light of these thoughts the court held that the tires in question are properly dutiable under the provision in paragraph 449.

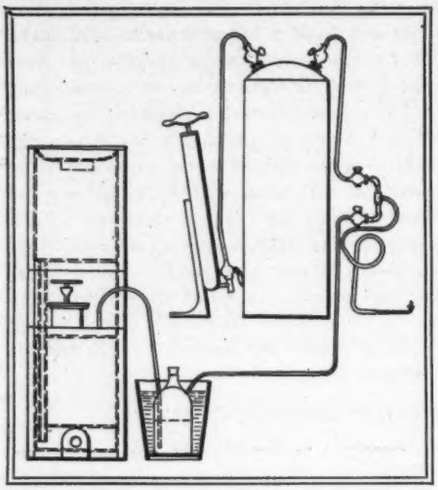
STORAGE BATTERIES DESIGNED FOR CARS

THE history of the storage battery dates from the year 1860, when a Frenchman named Gaston Planté immersed two pieces of sheet lead in dilute sulphuric acid without touching each other and passed a current from an external source through them; one of these plates became oxidized, and upon reversal of the current the oxidized plate became reduced and the other plate became oxidized. He discovered that upon breaking the circuit the lead plates had become charged and would act like a primary battery in giving current, the oxidized plate being the positive and the reduced plate the negative pole. He further discovered that by reversing the current several times the capacity of the cell was considerably increased by reason of the fact that the layer of oxide would become thicker upon each reversal, and that this oxide becoming reduced would give a layer of spongy lead, thereby increasing the capacity of both the positive and the negative plate. In 1880 another Frenchman named Camille Faure and an American named Charles F. Brush, almost simultaneously brought out plates in which the chemical actions employed were the same, but instead of forming the layer of oxide from the metallic body of the plates by the reversals of current, the oxide was mechanically applied to frames of lead or lead alloy. By this process the same, or greater capacity, could be obtained from plates of less weight.

Plates of the former type, although very much modified in design over those of Planté, are today extensively used in stationary work, and to some extent in portable work. They are also used to a very limited extent in motor car work; but the plate almost universally used in this class of service is of the Faure or Brush type, and this paper will be devoted to this type alone. The earliest commercial application of the storage battery for motor car propulsion was made with the chloride accumulator, a battery of modified Planté type, and in 1899 its makers, foreseeing the need of a lighter and more compact type, the result was the battery since known as the "Exide." The makers have kept in close touch with the requirements of service, and not only have the positive and the negative plates been modified from time to time, but the jars and accessories and methods of mounting and connecting the cells have been improved just as the vehicle itself has been improved, as the requirements have become better understood.

The storage battery finds itself used in various ways in a motor car. In the electric machine it is the entire source of the energy used for propulsion. In the gasoline-driven machine it makes a convenient and reliable source of ignition. These two form by far the largest uses, although, in the case of the combination gasoline-electric machine the storage battery is useful as a reservoir of power to be called upon in emergency conditions, enabling the power plant to be of size more in proportion to the average rather than to the maximum demand. In this system the storage battery is also very useful in starting the engine. The storage battery is also used to some extent for lighting motor cars, and in some cases the ignition battery of a gasoline machine is made of specially high capacity, so that it can be used for front and rear lights in addition to its function of furnishing current for the spark.

EDITOR'S NOTE.—Paper prepared by Bruce Ford, member of the Society of Automobile Engineers.



FOR BURNING BATTERY STRAP IN PLACE

For Pleasure and Business

As used for propulsion, the battery can be divided into two classes: those used for pleasure vehicles, and those used for commercial delivery wagons and trucks. The type of battery is, in general, the same. In commercial service, however, the batteries run to much larger sizes and, in consequence of this as well as the less resilient spring and tire action, they are of necessity assembled in a more heavy and substantial manner. Propulsion batteries consist of the following elementary parts: positive plates, negative plates, separators, straps, jars, covers, connectors and crates.

The Exide plate consists of a grid of special elastic lead alloy filled with a paste of lead oxide. In design the positive and negative plates are similar, the positive grid, however, being thicker and heavier than that for the negative plate. The standard grids are 7-32 inch and 3-16 inch thick respectively. The grid consists of a frame around the outside of the plate, having vertical bars throughout the body of the plate spaced about ¾ inch apart and which extend from its top to its bottom edge. There are horizontal rods of very small cross section flush with the surface of the grid and spaced about ¼ inch apart on each side of the plate; the rods on one face of the plate are not placed opposite those on the other but midway between them, or in staggered relation. It is thus seen that the body of the grid contains open spaces about ¾ inch wide, which extend from the top frame to the bottom frame and are enclosed by the horizontal facial rods; these open spaces are filled with the lead oxide paste, which, when in position, sets like cement in the form of a pencil about ¾ inch wide, held in its position between the vertical bars and between the facial horizontal rods. The plates, after being pasted and the paste allowed to set, are given an electro-chemical formation, during which the paste or active material of the thicker plates becomes peroxidized, making them positive plates, while the active material of the thinner plates becomes reduced to porous, spongy metallic lead, making them negative plates. Each grid is supplied with a projection or lug which is attached at or near one of its upper corners.

The plates are made of different sizes, but the two sizes most used are the MV, 8⅝ inches high by 5¾ inches wide, and the PV, 8⅝ inches high by 4¾ inches wide. The MV is rated at 7 amperes per positive plate for 4 hours, and the PV at 6 amperes for 4 hours; a sufficient number of plates are assembled in each cell to give the required capacity, and a sufficient number of cells are connected in series to give the required voltage. Each cell consists of a rubber jar, an element and electrolyte. The rubber jar consists of a deep rectangular box of hard rubber, with walls ⅛ inch thick, more or less, according to the size and service. In the bottom of the jar, and made integral with it, are bridges or ribs of height consistent with the service and whose function it is to support the weight of the element and to provide space into which is deposited the sediment thrown off by the plates with wear.

Construction of Elements

The element consists of positive and negative plates burned to straps and kept apart by separators interposed between the positive and negative plates. In assembling an element, a negative plate is laid down with a separator on it, then a positive plate, separator, negative plate, and so on. The plates are so placed that all the lugs of the positive plates are on one side and all the lugs of the negative plates are on the other side. A strap, consisting of a flat strip of lead or lead alloy having rectangular openings in it of the same dimensions as the cross-section of the lug of the plates, these openings being spaced to register with the lugs, is then placed over the plate lugs of the positive plates, and a similar strap is placed over the lugs of the negative plates. The lugs are then burned into integral union

with the straps. In pleasure vehicle service it is customary to make the plate lugs comparatively short, so that the straps are somewhat below the top of the jar, and a cover consisting of a rectangular piece of hard rubber is placed on top of the straps which are furnished with projections extending through holes in the cover and by which the cells are connected by burned joints. In commercial service the batteries are usually assembled with top straps, and the plate lugs extend above the top of the jar, the strap having two rows of holes in it, one row being placed over the correspinding row of plate lugs of one cell, and the other row of holes being placed over the plate lugs of opposite polarity in the adjoining cell, and the cell is completed by burning the lugs to the straps, which, in this case, themselves make the connection from cell to cell.

Using Rubber Covers

In pleasure vehicle service it is customary to enclose the cells with a tight-fitting rubber cover resting on the plate straps slightly below the top of the jar, and to seal the joints with sealing compound, placing a rubber plug in a hole in the center of the cover for filling cells with water to replace evaporation, the plug being supplied with a small hole for the escape of gases. In commercial service, covers are often dispensed with altogether, as the batteries are usually in service a greater proportion of the time and require filling and inspection much oftener. Where covers are used to prevent splashing, they usually rest on special supports and are seldom sealed. From forty to forty-two is the largest number of cells that it is customary to use, as more than this number cannot be charged in series from a 110-volt lighting circuit, and, without special and inconvenient apparatus, it is bad practice to charge batteries in parallel. In the smaller equipments, where the use of forty or forty-two cells would necessitate cells of very small size, it is common practice to use fewer cells of a larger size in spite of the fact that in charging some of the voltage may be wasted through resistance.

Efficient Wood Separators

The separator, which has proved by experience to be the most successful, consists of a piece of wood veneer with parallel grooves about ¼ inch wide, spaced close together and plowed out of one side, the plain sides being placed directly against the face of the negative plates. A thin sheet of perforated hard rubber is placed against the grooved side of the wood and rests against the face of the positive plate; this perforated rubber performs a double function, in that it protects the wood from the oxidizing action of the positive active material and also tends to restrain the wearing action of the wash of the acid on the active material of the positive plate. The grooves of the wood

separator are arranged vertically, and there is thus a number of free channels for circulation of the acid and for the escaping gases liberated during the action of the battery, especially toward the completion of the charge. The wood of which the separators are made is given a chemical treatment to remove substances contained in natural wood which would otherwise do great damage to the plates; this is of the greatest importance, as the success of the wood separator depends upon the proper method of treatment, and the thoroughness with which the treatment is applied. An improperly treated wood separator is a menace to the life of the plates.

The cells are filled with electrolyte, which consists of a mixture of pure sulphuric acid and pure water, with a specific gravity of about 1.210. After the battery is fully charged the specific gravity reads about 1.280; the reason for this rise in gravity is that the negative plates before leaving the factory are given a slight sulphating treatment to prevent their oxidation; in giving the battery its initial charge the sulphate is reduced to spongy metallic lead, giving sulphuric acid to the electrolyte, which raises its gravity.

Influencing Battery's Life

The durability of a battery not only depends upon pure materials and uniformity of methods in manufacture, but also upon the care which it receives in operation. A battery could be ruined in half a dozen discharges by sufficient abuse, whereas, with good treatment the same battery might have run for several hundred discharges. The manufacturers, realizing the importance of this fact, have expended a great deal of time and money in trying to impress upon the users the importnace of following a few simple rules; and the instruction books, which are carefully revised and brought up to date from time to time, are worked out with a view to bringing out clearly the necessity for following the rules laid down. One of these instruction books is now in its fifteenth edition. A battery is not like a steam engine or dynamo, which, if neglected, will squeal or groan and refuse to work. There are, however, just as clear evidences of trouble or neglect in the storage battery, if looked for, as there are in an engine or dynamo being run without oil. Voltmeters and hydrometers used in an intelligent manner can be used to determine a battery's condition with remarkable accuracy if properly understood.

The life of a battery with pasted plates is normally limited by life of the active material of the positive plates, which with

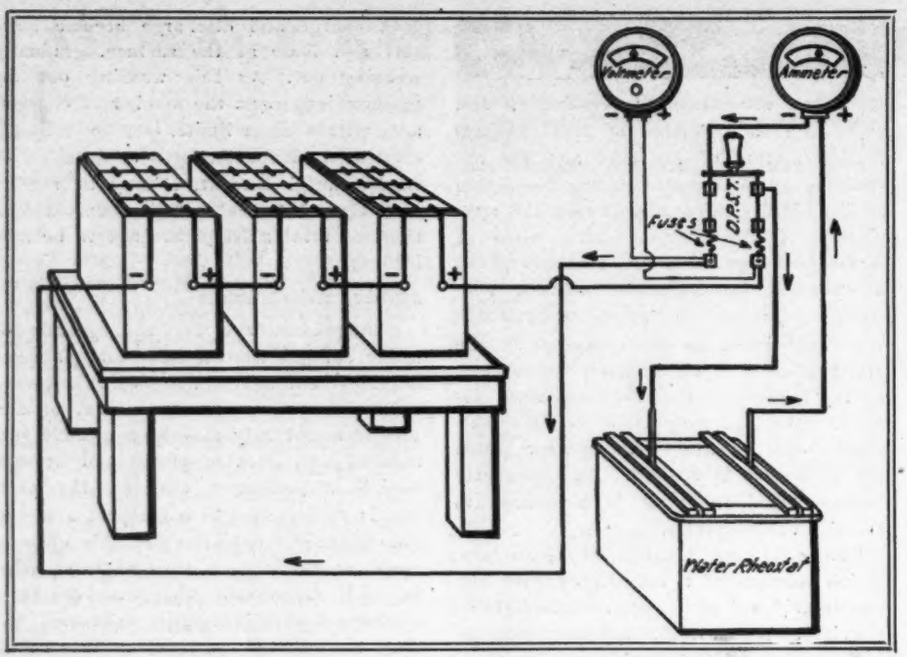
each charge and discharge become more soft and loose at the surface, gradually washing out. As this washing out depends chiefly upon the number of charges, and, within usual limits, is practically independent of the strength or duration of the discharge current, it may be readily seen that statements of life expressed in time, or total mileage, are apt to be misleading.

Ignition Accumulators

Storage batteries for the ignition of motor car gas engines have become quite an important development of the storage battery business. For this class of service it is not only necessary to have substantial and durable plates and fittings, but it is necessary that all the parts should be mounted in a compact and durable manner. Batteries for this class of work, at the present time at least, must be built for abuse. They are frequently discharged until practically exhausted, and they are allowed to stand in this condition. No battery worked in this manner can give the best results, and it is economy to take care of the batteries in this class of service just as it is economy to take care of them in other classes of service. The discharges, however, extend over long periods of time and, even when abused, after the battery has given comparatively few discharges it has had a considerable life, measured in time. The Exide battery for this purpose consists usually of three cells, each element composed of plates, usually 5 inches high and 4¾ inches wide, mounted in a rubber jar with wood separators, and having posts extending through the cover of the jar. The posts are extended and terminate in a bolt and nut connection for the ignition. The bolts were formerly made integral with the posts, but owing to the possibility of their being twisted off or stripped they are now made separate and can be easily replaced if broken or damaged. The cells are mounted in a substantial box and are made integral with the box by pouring compound between the jars and the sides, and flooding the compound level with the top of the box, which is somewhat above the top of the jars and inter-cell connectors. Tubes placed in the covers extend through this compound and are closed by a removable vent cap, which gives access to the cells for filling with water to replace evaporation. It is good practice to charge these batteries at regular intervals whether they are being used much or not.

Light Weight Not All

The aim in the design of the Exide cell is to produce the greatest watt output per pound at the 4-hour rate of discharge, consistent with durability. The straps and plate lugs are not only designed with reference to mechanical strength, but also are made of cross-section consistent with drop in voltage, to give the maximum



BATTERY CONNECTED FOR CHARGING WHEN OUT OF VEHICLE

watts per pound at the cell terminals. In the vehicle battery this is a most important feature. There are many cases where the vehicle manufacturers could give advantageous consideration to the drop in conductors. An Exide cell discharging at its 4-hour rate is giving, roughly, 2 watts per pound of cell. In ordinary cases the most economical size of wire to use for the conductors would be that which would give a loss per pound nearly equivalent to the output per pound of battery; or a conductor loss of about 2 watts per pound of wire, since the number of watts per pound should be a maximum at the motor terminals and not only at the battery terminals.

There are probably many cases where the addition of a pound to the wire or to the controller contacts would save three watts or more at the motor terminals. It would seem that aluminum is a metal particularly well suited for wiring electric vehicles, since its weight for the same conductivity is much less than that of copper. By using aluminum conductors it would, therefore, be possible to reduce the weight and also to reduce the total loss in conductors both together. Its cost for the same conductivity is about the same, or even a trifle less, than the cost of copper. I have, however, never heard of aluminum being used for this purpose in this class of work.

Standard 4-Hour Capacity

Present practice is to rate batteries on the basis of their 4-hour capacity; for instance, a 9-VP cell is rated at 24 ampères for 4 hours, the 11-MV cell is rated at 35 ampères for 4 hours. The reason for this is that present practice is to so construct the vehicles that at the average current consumption the vehicle will run for about 4 hours. Some years ago it was the practice to rate vehicle cells on the basis of their 3-hour capacity. This, however, was when a heavier type of cell was used and the requirements for mileage per discharge were not as great. If a battery will give 40 ampères for 4 hours, or 160 ampère hours, it will not give 160 ampères for 1 hour; and if discharged to 20 ampères it will give more than 8 hours, or more than 160 ampère hours. This is one reason why greater mileage can be obtained on a charge when the vehicle is run at low speed, although, of course, other factors, such as wind resistance, etc., play their part. Exide batteries with proper use will increase up to from 15 to 25 per cent more than their rated capacity.

Demands are made from time to time for a battery having a greater capacity for unit of weight. It is an axiom in storage battery work that greater capacity for unit of weight means decreased durability. The simplest way to increase capacity with the same weight is to fill the plates with a more porous paste. This results in a paste which, with use, becomes softened up and washes out more rapidly, and is not considered good practice. The preferable method is to make the plates thinner and put more of them in each cell. A plate of one-half the thickness will not have the same capacity as a plate of standard thickness, but it will have more than half the capacity. This fact, together with the fact of there being more plates per cell, and therefore, at the same current per cell the rate of discharge the plate is lower, makes an appreciably higher ampère-hour capacity per unit of weight. Cells have been made in which the positive plates are $\frac{5}{16}$ inch thick and the negative plates 5-32 inch. By placing eleven of these plates in a jar designed for nine standard plates, the weight is increased about 2 per cent, while the capacity is increased about 20 per cent. The life, expressed in number of discharges, is naturally less in the special thin plate combination. If, however, the full capacity is taken out on each discharge, the life in ampère hours, or, in other words, the mileage obtained, would be about the same as with standard plates fully discharged each time.

Rules Governing Usage

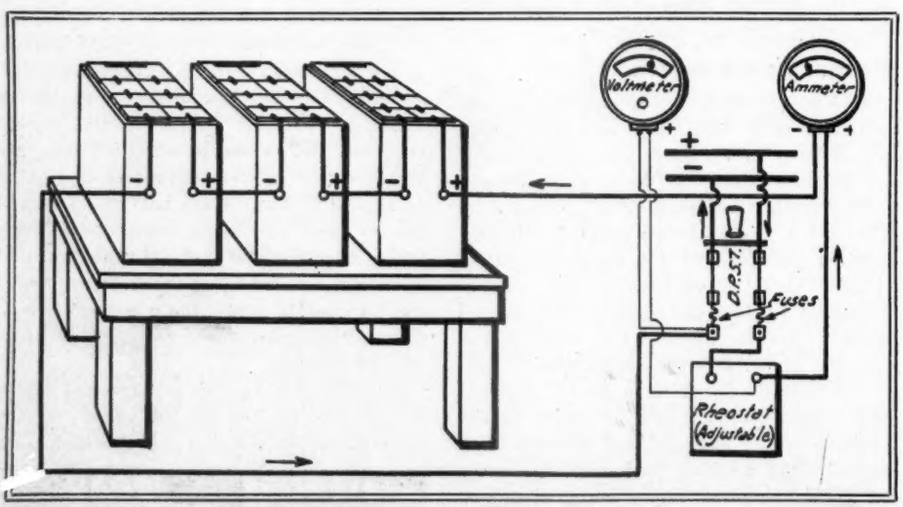
In general, the observance of a few simple rules is all that is necessary to get the best results from any kind of lead storage battery. The principal rules to be followed are:

1—Keep the level of electrolyte above the top of the plates.

2—Never replace evaporation with anything but pure water.

3—Do not make a practice of charging batteries when only a small percentage of their capacity has been taken out, except, as above noted in ignition service, where the length of time necessary to take out a larger percentage might be too long.

4—Do not allow the batteries to remain an unnecessary moment in a discharged condition, and at intervals see that the battery is charged to its maximum.



BATTERY CONNECTED FOR TEST DISCHARGE

Motor Car Shop Kinks

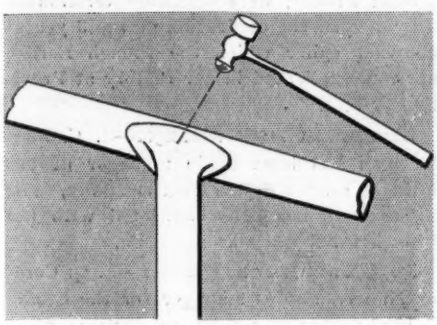


FIG. 1

FLANGING COPPER PIPES

Coppersmith work is somewhat out of the line of the ordinary garage, but there are plenty of ocasions where a knowledge of the art is useful, as for example in fitting new water and induction pipes, altering the location of a carbureter, etc. A copper pipe is bent by filling it when warm with melted resin, which when cold holds it in shape while the bend is made. Flanging the end of a pipe is a simple operation when a square flange is desired. The flange is started by driving the pipe over the horn of an anvil, then a ring or collar is put around the pipe to locate the corner of the flange, and a mandrel or even a hardwood block plug-driven into the pipe holds it in shape internally. The flange is then easily formed up by wedges and a mallet. At least one annealing will probably be necessary. Flanging the end of one pipe to join another pipe is a more difficult operation, and it is better, if the pipe is large, to work it at red heat instead of cold. The flange is started by driving the end of the pipe over the horn of an anvil. When the end has been spread sufficiently, it is put on an arbor of the diameter of the pipe to which junction is to be made, and driven hard against it as in Fig. 1. This stretches the flange lengthwise. The sides of the flange are then hammered down against the arbor, Fig. 2, and the flange is shaped to the form of the arbor by pening it lightly all around. To fit the end of a pipe to a loose collar or stuffing-box, the pipe is first made circular by tapping it with a hammer or mallet while it is held loosely in the left hand. When it is approximately circular, the collar is driven over it and struck smartly with a hammer all around its circumference, Fig. 3. This indents it slightly in the copper and shows where the latter needs to be filled. It also helps to shape the copper to the inner circle of the collar. The collar is then driven off and the pipe filed with a coarse bastard file to reduce it and bring it circular. It is finally polished with sandpaper.

Copper pipe is too soft to be gripped in a vise without holders formed to its contour. Such holders are easily made by wood blocks grooved to fit the pipe and

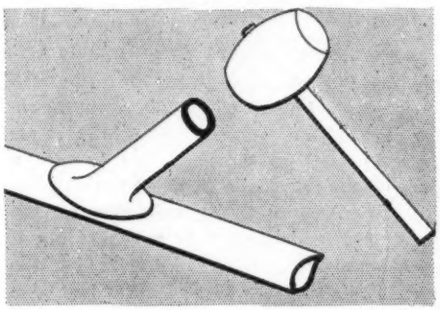


FIG. 2

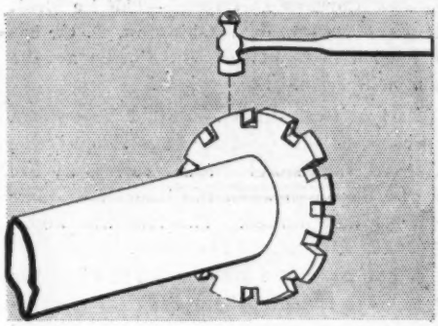


FIG. 3

having the ends of the groove slightly bell mouthed to avoid kinks when the pipe is bent, as in Fig. 4. For bending the pipe, much use is made of a stirrup A, Fig. 5. This is simply a strip of sheet copper bent and soldered in a loop and having the portion that goes over the pipe wound with asbestos wicking to act as a cushion. The stirrup serves as a fulcrum and a bar B is passed from it and one end led against a wood block C. The pipe is gripped between grooved blocks in a vise and the workman grasps the bar B at both ends, pulling and thrusting on it as shown by the arrows and shifting the stirrup along the pipe to bend consecutive portions of it.

SPRUNG GEAR SHAFT

Every time a car is taken down for overhauling, the gear shafts, especially the squared shaft, should be tested carefully on centers to ascertain whether they have been sprung. It will be found that in a large percentage of cars they require straightening, which can be quickly accomplished after removal from the gearbox, with very little loss of time.

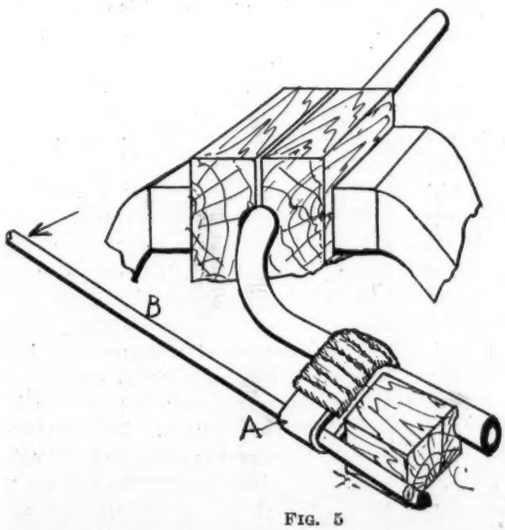


FIG. 5

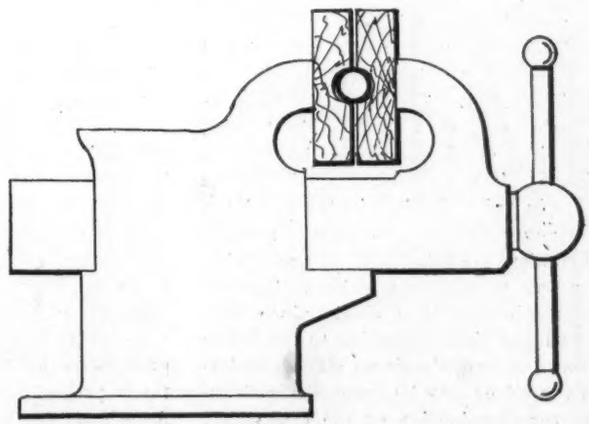


FIG. 4

Among the Makers and Dealers

New Concern in Capital—The Le Droit Automobile Co., of Washington, D. C., has opened a salesroom at 649 Florida avenue and will handle the Stearns.

Fire at Goshen, Ind.—Putt & Teegarden, owners of the Goshen Auto Supply Co., Goshen, Ind., suffered a severe loss by fire a few days ago when the interior of their garage was burned. The loss was about $10,000, with $6,000 insurance.

Piper Takes the Stevens—J. C. Piper has taken the Indianapolis agency for the Stevens-Duryea, with headquarters at 307-309 West Maryland street. Last year the Stevens-Duryea was handled in Indiana by the Boyd Automobile Co., which was succeeded this season by the Buick-Losey Co.

Dow Branch in Boston—The Dow Tire Co. has opened a branch in Boston at 889 Boylston street. The company had a temporary branch there in the Hub on Summer street, but the permanent headquarters has been fitted up to do a big business. Henry T. Brown will have charge of the agency.

Jones Doing Good Work—The Jones Speedometer Co. has written to Mayor Charles A. Bookwalter, of Indianapolis, for information relative to the city and state speed laws. Arrangements are being made by the company to post the highways leading to and from Indianapolis with signs indicating the legal speed limits, something not now found on Indiana roads. An effort was made at the last session of the Indiana legislature to enact a law providing speed and direction signs, but the rural members of the house defeated it.

Lozier's 1909 Line—The 1909 line of Lozier cars, which the Lozier Motor Co. placed on sale July 1, consists of two models, a 45-horsepower, A. L. A. M. rating, four-cylinder shaft-drive and a 50-horsepower, A. L. A. M. rating, six-cylinder shaft-drive, the chain-driven construction being entirely superseded by the new system. These two models will be equipped with runabout, touring car, limousine or landaulet bodies. The 1908 features of the Lozier car, such as the shaft-drive, ball-bearing crankshaft, etc., have been continued. The cylinders of all models are cast in pairs, finished in the usual Lozier manner—baked pearl-gray enamel. The cylinders are fitted with covers, giving easy access to the waterjackets. The engine base is cast in a single piece with arms and bed plate extending to the frame members. A cast aluminum oil pan underneath the motor may be dropped for cleaning or for examination of the crankshaft bearings. The cylinder dimensions of the 45-horsepower are 5¼ by 5¼, and 4⅝ by 5½ for the 50-horsepower six-cylinder. The valves are of nickel alloy and on opposite sides of the motor. The valve springs are seated to the lower end in cup lifters. The valve lifter housing are yoke-fastened to the aluminum motor sub-base.

New Ford Factory—The Ford Motor Co.'s new factory will consist of one main building, a separate office building, a separate power-house and a large group of saw-tooth roof constructed buildings. The main building will be 865 feet long, 75 feet wide, four stories high and will be built throughout with reinforced concrete, glass and steel. The total floor space of this building is 258,000 square feet—a mile of floor 50 feet wide—6 acres of floor space in one building. It will contain 13,400,000 cubic feet of space. For heating the building 58,000 feet—11 miles—of pipe are required. The Ford Motor Co. owns 60 acres of land and the complete plans contemplate utilizing the entire tract for the new plant. It is the old Highland Park race track property, and includes a mile track which will be used for testing. When finished—and the work is to be rushed through—every part of the Ford cars will be manufactured there, from bolts to cushions, giving employment to 5,000 men, and an output of 500 complete cars per day.

Absorbed by Parent Company—It was announced last week that the American Locomotive Automobile Co. is about to enter new fields of activity and a broader career, in view of which it has become a part of the parent body, the American Locomotive Co., and the existence of the motor car organization as a separate corporation has been terminated. It was stated also that the name Berliet has been dropped. Concerning these changes Vice-President Ball, of the American Locomotive Co., said: "The American Locomotive Co., having acquired all of the stock of the American Locomotive Automobile Co., has for corporation reasons absorbed that subsidiary company with several others which have heretofore led separate existences. The policy, therefore, is not one affecting the motor car company solely. The motor car business will be continued in the works at Providence, in the garage at 1886 Broadway and in the agencies in various cities in the country on a larger scale than ever. Besides continuing to make touring cars under the Locomotive name the company has in prospect a business of considerable proportions in the production of trucks and cabs. All of these products will embody foreign and American practices in construction, but henceforth the name of Berliet will be dropped. The relations of the American Locomotive Co. with Monsieur Berliet, of Lyons, France, were amicably terminated July 1 upon the expiration of the 3 years' contract under which the French Berliet car was duplicated in our factory at Providence, R. I."

Zimmerman made Manager—J. C. Zimmerman has been made manager of the Chicago branch of the Fisk company. Mr. Zimmerman has been connected with the branch for 2 years as salesman.

Long Vacation for Cordner—E. Q. Cordner, western sales manager for the Studebaker, will not return to harness until September 1, having been ordered to rest and recuperate until that time. Upon Mr. Cordner's return from Atlantic City, where he went to recover from a serious attack of illness, he was told by the officers of the Studebaker concern to take another vacation so as to be ready for a big year which is anticipated in 1909.

Diamonds Stand the Gaff—An interesting record has been kept for the last year by McClay & Black, of Los Angeles, who have a large number of cars in rent service. They have tabulated carefully the exact record made by each individual tire on every car, also keeping account of the work done by each complete set of tires for comparison against the earnings of the machines on which they were used. This year Diamond tires have been the equipment exclusively, and the average record of each tire, also of each complete set of tires, is over 7,000 miles. The cars are all of seven-passenger capacity.

Spare Wheel Files Complaint—Bills of complaint have been filed by the Spare Motor Wheel Co. of America, Ltd., for infringement of patent against the Black Mfg. Co., Fort Wayne, Ind., and the E. T. Burrowes Co., Portland, Me., the former bill being filed April 3 and the latter July 1. The filing of these bills of complaint is based on the claim made by the Spare Motor Wheel Co. of America that it is the owner of the exclusive right to manufacture and sell the spare wheel, to be attached laterally to motor car wheels in case of puncture or blow-outs, under United States letter patent No. 879,610, issued by the United State patent office February 18, 1908, the original patentee being Dr. Perry Ernest Doolittle, Toronto, Ontario, Can. The infringement complaints are that the named companies have imitated the original Stepney wheel with more or less accuracy, at least similarity, and that both wheels are infringements upon the letters patent already named. The patents are owned by the Spare Motor Wheel Co., Ltd., an English corporation, and the Spare Motor Wheel Co. of America is the licensee of the invention in this country.

From the Four Winds

N S E W

Kenosha Is Aroused—Members of the Kenosha Automobile Club, of Kenosha, Wis., are planning a state-wide campaign for the passage of a law that will place a heavy penalty on the crime of obstructing the roads used by motor cars. It is aimed to make it a penitentiary offense. The recent depredations in Milwaukee, and the fining of five Kenosha county farmers for blocking roads, for which they paid fines of $25 each, the limit under the present law, has renewed the agitation.

Belgium's Motor Strength—From government records just issued it appears that there were 3,262 motor cars and 4,002 motor cycles in use in Belgium on December 31, 1907. Thus there was one motor car per 2,198 inhabitants and one motor cycle for every 1,791 inhabitants. The records also say that while there were 311 more cars in the land than on December 31, 1906, there were 293 fewer motor cycles. Another official report refers to the province or state of Brabant, in which the capital, Brussels, is located. There have been recorded with the authorities of the state 1,097 motor cars in 1907, of an average of 15.3 horsepower.

Motorists Win Suits—"Motor cars have as much right in a roadway as carriages, and chauffeurs are quite within their rights in sounding a horn to give warning," declared Judge Sherman in the Norfolk Superior court at Worcester, Mass., in the case of Elliott C. Lee, former president of the Massachusetts State Automobile Association, and Charles F. Baker, defendants in seven suits for total damages of $37,000 as the result of the fatal runaway on Walkhill street, Forrest hill, June 26, 1906. The jury returned sealed verdicts in favor of the defendants. The case hung on the contention that their horse was frightened by the horns on the Lee and Baker motor cars as they were passing.

After the Speed Traps—The Automobile Owners' Association of Boston held a meeting a few days ago at which it mapped out a campaign to wipe out all traps in that state. It was voted to set aside $500 for a starter in carrying on the work. A number of men will be engaged, and they will be dressed in khaki uniforms. These men will go to places like Hingham, Norwood, Andover and other places where the officials are very active in working traps from ambush, and as each motorist passes along toward where there is a trap he will be handed a card which will say: "Please observe the wishes of the people of this town and drive SLOWLY.—Automobile Owners' Association." It is anticipated that in some of the places the police may object to having the plan worked, as it may kill the traps which give such a great revenue every week. But the organization is determined that if any hostility is displayed to the members of its force the matter will be taken to the courts and threshed out to a finish.

Irwin Reaches Boston—President Thomas C. Erwin, of the Lord & Thomas advertising agency, of Chicago, arrived in Boston a few days ago in a Packard car after a delightful trip of 6 days from Chicago. With him were his three daughters and Mr. and Mrs. Young, also of Chicago. The tourists never had a puncture from the start. At Boston they were met by Mrs. Erwin and four more of their children, and the entire party then went on to Annisquam on the north shore, where it is intended to spend the summer.

Bay State Run Off—The Bay State A. A. touring committee had to declare off its proposed run to the Wentworth at Newcastle, N. H., which was scheduled for Friday, Saturday and Sunday of last week, because many of the members had made other plans for the holiday. The regular outing will be held later in the month. The racing committee of the club has started on plans for an endurance race to Bretton Woods and return, which will be held next September, when the contestants will have to cover the trip within 24 hours with sealed bonnets.

More Good Roads—Marion county, Indiana, will soon have the finest system of highways in the state. The county commissioners have begun to make over the most prominent roads after the pattern of the famous Kentucky highways. So far the road leading to Millersville has been started and about 2 miles has been completed. It is being improved with crushed stone and screenings, rolled solid and oiled. The county has just purchased a 10-ton road roller for the purpose. By fall most of the roads in the county will be improved in this manner, a large sum having been appropriated for the work.

Badger Tour Plans—The Milwaukee Automobile Club's first annual Wisconsin trophy tour starts July 14, and at least twenty-five cars will start on a 5-day tour of the river and valley districts of Wisconsin, from Milwaukee to Wausau and return. Clubs and private owners in the various cities on the route have pleaded to be allowed to entertain the tourists. At Wausau Neal Brown, president of the Wisconsin State A. A., will hold open house with his fellow members of the Wausau A. C. At Merrill A. H. Stange, millionaire lumberman, and J. H. Wright, state senator and lumber king, will entertain. From Wausau the motorists will choose their own routes to Milwaukee. Because of difference of opinion it was decided not to fix a return route. Some will go to Green Bay and then back down the west shore of Lake Michigan, and others to Neenah, Menasha and down the east coast of Lake Winnebago. It is planned to have all cars in Milwaukee on Saturday, July 18.

Good Drive by Owner—Dr. A. J. Rinehart, of Ashland, Wis., a Lake Superior port, has just completed a tour that should, some think, go down in motor history as a distinct achievement for a private owner. Dr. Rinehart has just returned to Ashland in his big seven-passenger White steamer after covering exactly 2,544 miles without a mishap of any kind. The car went through every kind of road, and sometimes it wasn't road, simply a path. The party consisted of Dr. Rinehart, who drove all the way; Miss Mollie Chesley, Miss Virginia Hodges and J. F. Fischer.

Decision to the Buick.—The technical committee has officially proclaimed the Buick winner of the Maxwell challenge race from New York to Washington, the final standing showing that the Buick had 13 points scored against it, as against 281 points for the Maxwell. The Buick finished 52 minutes ahead of the schedule, but was penalized 4 points for stopping the engine twice, 4 points for breaking the radiator seal and 5 points for taking on water. The Maxwell was 1 hour and 22 minutes late at the finish, thereby suffering a penalization of 244 points. It also lost 4 points for a broken radiator seal, 6 points for a lost pet cock, 10 points for work on the pet cock, 2 points for a broken tool-box seal, 15 points for a bent steering knuckle and 5 points for taking on water on the trip.

Fast French Trials—In the second annual speed trials—1 kilometer, flying start—promoted by the Automobile Club du Rhone, of France, held on the Anse aux Cheres road, near Lyons, June 21, the fastest time of the day was made by a six-cylinder Bayard-Clement racing car driven by Venus. The time was :22⅕, which was 2⅕ seconds faster than last year's record. There were some forty cars and about a score of motor cycles taking part in the trials. The cars were divided into classes according to bore. There were twelve classes besides that for racing cars. Cottin-Desgouttes cars took four firsts; Pillain two firsts; Sizaire-Naudin, Peugeot, Vermorel, Berliet, Bayard-Clement and de Dion-Bouton one each. Among the touring cars the best performance was credited to the little Sizaire-Naudin car, which went the kilometer in :54⅗, while the big Berliet made the run in :30⅘. Among the motor cycles the Peugeot scored best, its time being :47⅗.

Brief Business Announcements

Clinton, Ia.—Harry Burch is erecting a garage at Madison and Main streets.

Watertown, Wis.—Edward Buroff is building a garage on North Third street. It is of fireproof construction throughout, being two stories high.

Kansas City, Mo.—The Fletcher Cowherd garage is to add a second story to its building, all improvements to be finished by August 1.

Waverley, N. Y.—E. F. Brown has opened a store at 429 Fulton street for the sale of motor car tires and sundries, bicycles, sporting goods, etc.

Allentown, Pa.—A permit has been granted to Gery & Peters to erect for A. Ziegler, at the rear of 1043 Hamilton street, a two-story cement block garage.

Pittsburg, Pa.—The Automobile Brokers' Exchange, a newcomer in the field, is now handling the Mitchell in western Pennsylvania. The company has opened headquarters at 111 Beatty street.

Los Angeles, Cal.—Paul A. Renton, who has bought out all the other interests in the Renton & Williams Motor Car Co., and in the future will do business under his own name, is now the sole representative for the Great Smith in the coast territory.

Kansas City, Mo.—Work has been commenced on the new garage of the Midland Motor Car Co. at 1608-10 Grand avenue. The building is to be two stories in height, 50 by 115 feet. Contracts have been let for the completion of the building so it will be ready within 60 days.

Boston, Mass.—T. E. Hamilton, who has been acting as sales manager for the H. C. & C. D. Castle Co., has severed his connection with that concern and has been appointed New England agent for the Haviland Oil Co. F. B. Armington will be associated with Mr. Hamilton, and they will open up headquarters on Boylston street.

Milwaukee, Wis.—The Charles Abresch Co., a carriage manufacturing concern, has been appointed Milwaukee agent for the Kisselkar. The Abresch garage is at 398 Fourth street. The company has built motor car bodies for several years and is the designer and builder of the Milwaukee police patrol, which is equipped with a Meiselbach engine and chassis.

Newark, N. J.—Chester B. Henry has sold out his interest in the Pope Auto Co., of Cedar and Halsey street. In the future the business will be conducted by F. C. Fincke, who is to be the president of the concern, and C. A. Dickson, who will act as secretary and treasurer. O. A. Clark, the former president of the company, has also sold out his interest to his partners. Mr. Fincke is to be in active charge of the local branch, while the Summit Auto Co. will be in the hands of A. P. Hedrick.

East Orange, N. J.—Stanley M. Burnham has been appointed New Jersey agent for the Regal.

Cleveland, O.—The Cadillac Automobile Co. has opened new headquarters at 1839 Euclid avenue, next to the garage of the Elmore Motor Car Co.

Los Angeles, Cal.—The local agency of the Gearless is to be located in the Seventh street garage now in course of construction.

Newcastle, Ind.—The Maxwell-Briscoe Motor Co. is erecting two additions to its plant in this city, the additions to be completed in September. When in full operation 2,200 men will be employed.

Indianapolis, Ind.—An agency for the Knox has been opened in Indianapolis by John A. Boyd, who has established headquarters at 322 East Vermont street. This is the first time the Knox has been represented in this city for several seasons.

Kansas City, Mo.—It is likely that changes will be made in the affairs of the Auto Motor Co., of 1122-1124 East Fifteenth street, agent for the Pennsylvania car. While no definite announcement has been made, it is being considered whether to discontinue the business entirely or to let it go into other hands. If the business is continued F. F. Foulke is likely to become the manager. R. B. Jones and Gordon Beahan own the greater part of the stock of the concern, and unless some satisfactory agreement can be reached between these two interests it is probable that the business will be abandoned.

Chicago—Economy Mfg. Co., capital stock $2,500, to manufacture and deal in gasoline machines and specialties. Incorporators, F. W. Detray, W. Demms and A. M. Searles.

Dover, Del.—Guarantee Faultless Auto Tube Co., capital stock $10,000, to manufacture and deal in vehicle tires of all kinds. Incorporators, F. N. Hinkle, J. W. Ebbs and M. L. Ward.

New York—S. P. O. Automobile Co., capital stock $25,000, to engage in the manufacture of motors, engines, machines, etc. Incorporators, A. M. Newburgh, A. H. Peyser.

Oswego, N. Y.—Keating Garage and Engine Co., capital stock $10,000, to manufacture motor cars and motor cycles. Incorporators, P. R. Keating, Jr., James Dunlap, Jr., and A. C. Coon.

Dallas, Tex.—Dallas Motor Car and Transit Co., capital stock $6,000. Incorporators, J. A. Bergfield, J. C. Hooper and J. H. Power.

Los Angeles, Cal.—Electric Automobile Co., of Long Beach, capital stock $10,000.

Brockton, Mass.—Leighton Auto Co., capital stock $15,000. Incorporators, Albert Leighton, H. E. Fisher and G. J. Burns.

Baltimore, Md.—The building of the Maryland Automobile Tire Works was destroyed by fire June 25.

Newark, N. J.—M. A. Helmlinger, of 286 Halsey street, has been appointed distributing agent for the P. & H. reinforced inner tubes.

New York—C. A. Duerr has closed a contract with the Moon Motor Car Co., of St. Louis, to act as its representative in the eastern market.

Milwaukee, Wis.—Emil H. Ott has awarded contracts for the erection of a $4,000 brick veneered garage at Summit avenue and Windsor place.

Springfield, Ill.—The North Automobile Co., of Chicago, has been incorporated with a capital stock of $2,500 and will manufacture and deal in motor cars.

Boston, Mass.—A. F. Neil, who has the local agency for the Baker electric, has removed from the street floor of the Motor Mart to one of the upstairs offices.

Columbia, Mo.—The Mid-Missouri Transportation Co. has started a motor bus service between Ashland and Rocheport, a distance of 30 miles. Two trips a day are to be made.

Placerville, Cal.—Messrs. Fairbanks and Shermin have formed a partnership and will run a motor bus line from this place to Lake Tahoe. Two cars will be put on, one leaving Placerville and one leaving the lake each day.

Guadalajara, Mex.—J. R. Zavala has been granted a concession to operate a line of public motor cars in this city for the next 50 years. He proposes to import motor omnibuses, express wagons and cabs for local use and will establish a line between this town and Lake Chapala.

Indianapolis, Ind.—The Indiana Automobile Co., of this city, is making a substantial addition to its garage and salesroom, 220-224 East New York street. When completed the company will have one of the largest establishments of the kind in Indiana and will increase its supply department. This season the company is handling the Winton, Thomas, Franklin and Autocar.

Rome, N. Y.—The Willex Mfg. Co., which recently filed articles of incorporation, has commenced operations in the former plant of the Maxwell & Fitch Co. on South Washington street. It will manufacture timers and distributors, and gas engines invented and patented by D. W. Willex. The company will also open a garage, with accommodations for about thirty machines on its floor.